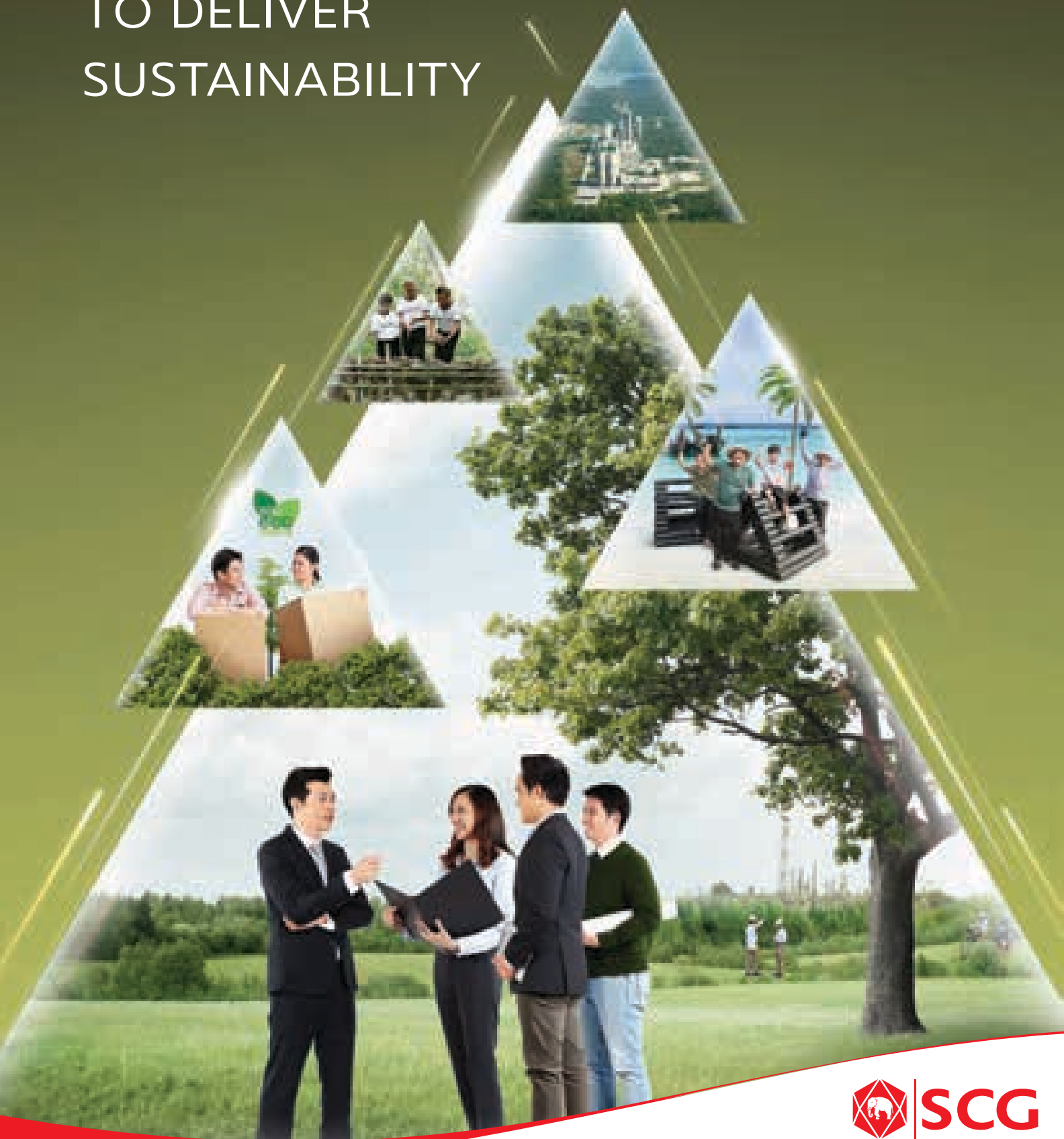


SUSTAINABILITY REPORT 2017

SCG

READY
TO DELIVER
SUSTAINABILITY



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President & CEO Statement

SCG is committed to nurturing sustainability, seeking to create a balance between societal, environmental, and economic sustainability. We do this by applying the Principles of Sufficiency Economy of His Majesty the late King Bhumibol Adulyadej.

In 2017, SCG managed to maintain membership in the assessment of Dow Jones Sustainability Indices for the 14th consecutive year in the Construction Materials Industry. We have undertaken fundamental steps towards sustainability by:

- Incorporating Corporate Governance Policy to over see internal management and prevent negative affects on stakeholders.
- Driving innovation to achieve global Sustainable Development Goals (SDGs) – underlying SDG 13: Climate Action according to the Paris Agreement. Aside, installation of Floating Solar system for renewable energy, SCG boosted sales of green products and services under the SCG eco value labeling scheme, warranting measures towards Circular Economy.
- Collaborating with public sectors and related entities through the Public-Private Collaborative, Pracharat, initiated projects to uplift wellbeing of the people and propel sustainable growth of the nation.

SCG pledges to step up efforts in partnering with public and private entities to achieve SDG 17: Partnerships for the Goals, creating value to all stakeholders. We believe we all share the responsibility in caring for our world and endorsing sustainable well-being of our society.



Roongrote Rangsiyopash
President and CEO, SCG



Chairman of Sustainable Development Committee Statement

SCG continues to embrace social and environmental issues harnessing Corporate Governance to balance business growth. We remain committed to incrementing sustainable value throughout the value chain, strengthening the foundation for all stakeholders to prosper alongside SCG.

In 2017, SCG restructured our sustainability management framework to work more effectively incorporating three economic dimensions: social, environmental, and economic. As part of the restructuring, sustainability development planning is now mainstreamed as an important component of the business plan. Significant moves over the year include:

- Reprioritizing SCG's Materiality Issues in order to reflect current situations and emerging trends over the next five years. Actions to address these materiality issues are also adjusted, including more rigorous monitoring and oversight.
- Proclaiming Life Saving Rules to reduce unexpected and severe accidents, and, at the same time, increasing the level of safety among our workforce and contractors. While

the rate of accidents and fatalities have diminished, the goal of becoming The Lifesaver remains a challenge.

- Reducing Greenhouse Gas emissions, using less energy, and using less water from external sources per production unit. We managed to reduce water usage by 7.5, 8.4 and 3.2% according to the Business As Usual (BAU) scenario. SCG will continue to step up our efforts to achieve our targets.

With the Principles of Sufficiency Economy of His Majesty the late King Bhumibol Adulyadej embedded in our backbone, SCG steers in the direction of Circular Economy, placing great importance on our planet's limited resources and making sustainable development widely accepted.

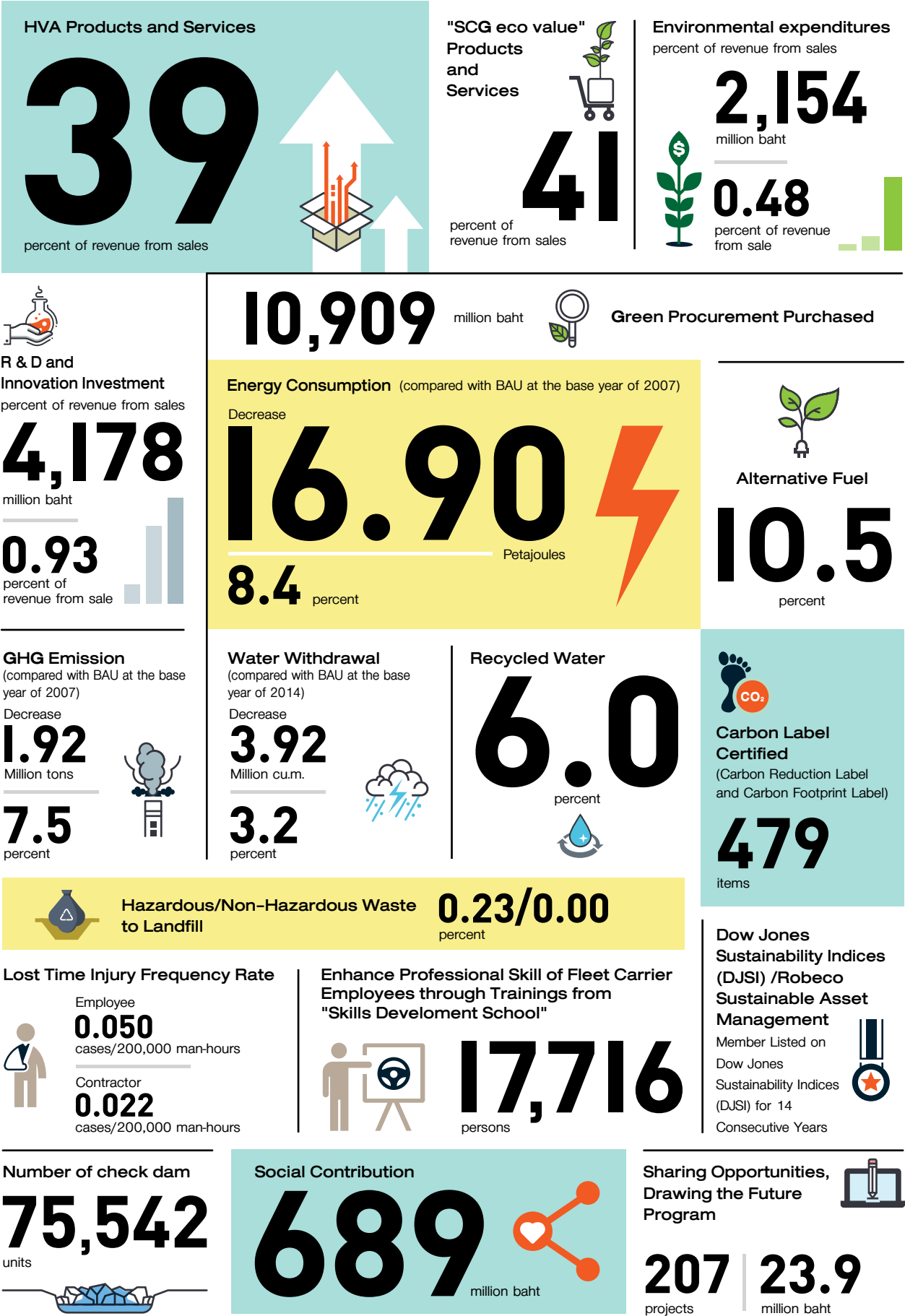


Cholanat Yanaranop
President, SCG Chemicals
Chairman, SCG Sustainable Development Committee



About SCG

Sustainability Highlights 2017



For more than 100 years, **SCG** has operated its business in line with corporate governance and sustainable development framework since its inception by Royal Decree of His Majesty King Rama VI in 1913. SCG now expands its business across ASEAN, with 200 subsidiaries and a workforce of more than 53,000 employees. SCG is at the forefront of leading companies with sustainable growth in ASEAN.

SCG operates our business within the sustainability framework with a clear policy, practice and guidelines relating to environmental conservation, occupational health and safety. SCG is a member of the World Business Council for Sustainable Development (WBCSD) since 2000. SCG Cement-Building Materials and SCG Packaging are the first Thai companies to become a member of the Cement Sustainability Initiative (CSI) and the Sustainable Forest Products Industry (SFP) under WBCSD, respectively.

SCG is the first Thai company listed in Dow Jones Sustainability Indices (DJSI) from the assessment of Robeco Sustainable Asset Management (RobecoSAM) for 14 consecutive years since 2004

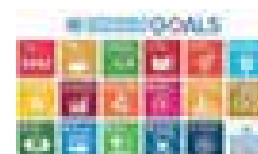
SCG is listed in FTSE4Good Index Series for a strong demonstration on Environmental, Social and Governance (ESG) practices in accordance with internationally accepted standards.

SCG is a member of the United Nations Global Compact, showing in our commitment to comply with international best practices. Since 2012, SCG achieved the Advanced Level of compliance that covers 24 aspects governing areas such as human rights, labor practices, the environment, anti-corruption, value chain, transparency and certification.

In disclosing sustainability information to stakeholders, SCG adopts the Global Reporting Initiative approach (GRI-G4.)

The United Nations has declared the Sustainable Development Goals or SDGs, where Thailand has endorsed its 17 goals with 169 targets. The goals are inconsistent with the business practices of SCG with a committed approach to sustainable development.

After Thailand has been signed the Paris Agreement on 22 April 2016. SCG is committed to support the country targets by setting up policy and strategy to reduce Greenhouse Gas Emissions as contributor to resolve climate change effects.



Our Core Business

SCG Cement-Building Materials



SCG's ASEAN expansion strategy has resulted in business operations in multi-location approach. The utilization rate maximization of the new brown field cement plants in Vietnam is further assisted by the integration to the downstream subsidiaries. At the same time, the Thai operations continue to operate for both domestic demand and the pre-market efforts for the regional countries while placing an increased emphasis towards the development of new products and services to serve customer needs.

Business Challenges

- Domestic demand for cement and building materials slackened due to the lack of consumer confidence and declining purchasing power. However, **SCG Cement-Building Materials** managed to maintain its leadership status in the building materials market through the continued development of high value-added products and services that address customers' needs and requirements.
- Overall, the reboot growth in the demand for building materials in ASEAN was fueled by the cement and building materials market expansion. Cambodia, in particular, witnessed a steady growth driven by the housing and commercial building projects and the government's large-scale infrastructure projects such as road network. In Myanmar, construction market rose mainly because of private direct investment especially in industrial construction in special economic zones. Vietnam construction market had grown slightly from government investing in infrastructure such as bridge and port. Whereas, Philippines Government increases infrastructure project to stimulate construction and domestic economy. Construction market in Indonesia picked up from last year as a result of government's continuous investment in infrastructure e.g. toll road, airport, dam and high speed train.



Notable Achievements in 2017

- SCG was awarded "Thailand's Top Corporate Brand Value Hall of Fame Award 2017" from the Faculty of Commerce and Accountancy, Chulalongkorn University. For 5 consecutive years, SCG ranks as top corporate brand value for corporate brand evaluation in the building materials sector.
- SCG was awarded, for 5 consecutive years, "Thailand's Most Admired Brand 2017 & Why We Buy?". The survey studies brands' credibility and factors associated with consumer decision to buy in the building materials/roof tiles sector awarded by BrandAge Magazine.
- SCG was pronounced Marketeer No.1 Brand Thailand 2016-2017 for the roof tiles sector awarded by Marketeer Magazine.
- COTTO's Soft Paddle Faucet was awarded the German Design Award 2017.

Operating Results

- In 2017, domestic demand for cement declined compared to the previous year. The domestic demand came from the government infrastructure projects while the demand from the household and private sectors witnessed some growth slowdown. The cement exports has increased compared to the year before.
- Revenue from sales of **SCG Cement-Building Materials** totaled 175,255 million baht, increasing by 3% from the previous year. EBITDA was 22,319 Million Baht, a drop of 6% year-on-year, and profit for the year was 7,230 million baht, down 15% from the year before.



SCG Chemicals has focused on developing new innovation, and increasing sales of high value-added products (HVA) to satisfy customers' needs and expanding business further to strengthen our competitiveness. The company also has emphasized organizational development as a foundation for developing new innovation and becoming an innovative organization, in order to take on all changes. Moreover, the company has committed itself to conducting business in line with sustainable development principles, and also developing eco-friendly production process.

Business Challenges

- The price of Naphtha, the main feedstock, increased 24% from the previous year following the increase of crude oil price. However, polyethylene (PE) prices increased only slightly, resulting in a decrease of PE-Naphtha gap. Polypropylene (PP) and PVC prices increased following the increase of feedstock prices, leading to wider margins of both PP and PVC.
- Nevertheless, overall petrochemical industry in 2017 was still in an upturn which aligned with improved global economy, although there was uncertainty of feedstock prices and additional supply from the United States.

Notable Achievements in 2017

- In 2017, **SCG Chemicals** further developed 11 new resin grades to serve various applications such as new polyethylene for pipe (PE 112) which has only two producers globally, polyethylene for extra light weight cap and closure that consumes less plastic but still maintains same property and strength, polypropylene for automotive parts with low

gloss property, suitable for usage in passenger room which helps reduce gloss for driver safety, PVC for cable jacket, with improved softness, flexibility, safety, and insulation properties for indoor and outdoor usage. As a result, sales of HVA products amounted to 30% of total revenue from subsidiaries' sales.

- Entered into an agreement, granting rights to a drug development company in the United Kingdom to utilize the Functional Material as part of drug delivery supply. Additionally, a pilot plant was started up under the collaboration with a university in China with experiences in scaling up products from laboratory to produce Functional Material under the trademark CIERRA™ for flame retardant additive. Further application development includes catalysts for petrochemical process by using CIERRA™ to increase operational efficiency. **SCG Chemicals** has set up new companies in Switzerland in order to enter into the potential market for CIERRA™ such as catalyst, barrier film, flame retardant additive, and drug delivery material. The company also set up company in United Kingdom for application research, enabling our capability to effectively respond to customers' needs of various industries.
- Expanded Low-Density Polypropylene (LDPE) capacity to 152,000 tons per year as planned, starting in April 2017. Property of this HVA LDPE resin is suitable for Flexible Packaging, especially food and beverage packaging and able to serve both domestic end users and global leading players in terms of product properties.
- Developed ReadyPlastic, a new online ordering platform for non-prime resins. The platform was well accepted and successfully tapped into the customer.

Operating Results

- In 2017, revenue from sales of **SCG Chemicals** totaled 206,280 million baht, increased 10% from the previous year due to an increase of products prices following an increase of crude oil prices together with an increase of sales volume. EBITDA were increased 6% to 64,461 million baht mainly from higher dividend from associated companies. Profit for the year remained stable at 42,007 million baht. Subsidiaries performance slightly dropped from higher naphtha cost and strong Thai Baht, despite gain on investment sales offset with improved equity income from associates.

The operating result of **SCG Packaging** is raising up comparing with last year. The key factors that support this result are from packaging paper's capacity expansion in Vietnam and Packaging business expansion across ASEAN in response to growing demand in the region. Furthermore, **SCG Packaging** has pledged to develop and increase sales of High Value Added products in response to customer needs along with enhancing productive efficiency to cope with volatility of raw materials prices.



Business Challenges

- Domestic demand for corrugated containers in 2017 continued to increase owing to export outperforms our expectations while demand in ASEAN grow moderately, especially in Vietnam. On the other hands, corrugated container manufacturers in the region continued to increase their production capacities, leading to an intense competition. This posed a challenge for manufacturers to rationalize their operational efficiency in response to customer needs and maintain sustainable business growth.
- Domestic demand for paper packaging continued to increase whereas demand in ASEAN grow moderately, in conjunction with the economy and export-oriented manufacturing.
- In 2017, Domestic demand for printing & writing paper declined mainly due to the substitution of digital media, especially in promotional materials and magazine segments. While imports coated paper and copy paper increased y-o-y. Copy paper industry remained high competition affected to severe price competition from China and Indonesia players.

Notable Achievements in 2017

- Successful capacity expansion of Packaging Business in ASEAN.
- Full capacity utilization of Vina Kraft Paper PM 2.
- Enhancing Packaging chain competitiveness though volatility of RCP price.
- Good progress on business transformation to be "Total Packaging Solutions Provider".

Operating Results

- In 2017, revenue from sales of SCG Packaging amounted to 81,455 million baht, up 9% compared to 2016 mainly due to higher sales volume of ASEAN operation in Packaging chain. EBITDA was 12,431 million baht, grew 14% from the previous year, and profit for the year was 4,719 million baht, improved 32% y-o-y as a result of Thai Union Paper's land and asset sale following the closure of business.
- Packaging chain: Total sales volume was up 8% compared to 2016 from capacity expansion in Vietnam and owing to increasing demand for packaging paper and corrugated containers especially in ASEAN which a 5% growth from the previous year.
- Fibrous chain: Total sales volume of printing & writing paper dropped 8% compared to 2016, due to a declined in export sales and steady decline in domestic demand.

Business Philosophy and Vision

SCG believes in **the ethical conduct** of our business. The Company's Board of Directors, management and employees at all levels consistently comply with this business philosophy. SCG is thus recognized as a leading, credible enterprise that conducts its business with transparency, accountability and the treatment of all our stakeholders equally.

SCG Business Philosophy

Adherence to Fairness

- Treat all stakeholders with fairness and equality
- Integrity, transparency, and accountability
- Work equally without prejudice to any particular group

Dedication to Excellence

- Create innovation to respond to the needs of the society
- Dedicate to goals and better results
- Keep up to date with global trends and ready to respond to changes

Belief in the Value of the Individual

- Develop employees' potential at all levels consistently
- Work as a team, care and respect each other

Concern for Social Responsibility

- Comply with safety, occupational health, and environmental standards
- Recognize the value of natural resources
- Help preserve the environment, community, and participate in the social development

Open & Challenge

Open – Open our mind to learning and Respect the difference

- Open our mind, listen to others, and be flexible to learn regardless of our belief
- Eager to learn and have courage to say we do not know
- Collaborate and network both internal and external organization
- Be courage to admit our mistakes and ready to learn to move forward

Challenge – Challenge ourselves for the betterment

- Do not limit ourselves to past nor present success
- Think out of the box
- Be assertive to express our different opinion, and accept the agreement after open discussion
- Be courage to make decision in a timely manner, and willing to take and manage risks
- Ready to turn our thinking and learning into action before being forced

SCG has defined a **vision** that provides a key goal in which all employees work hard to realize.

Overview of Business and Vision

SCG is a leading business conglomerate operating the business for over a century in line with the principle of sustainable development and good corporate governance. Established in 1913 following the royal decree of His Majesty King Rama VI, SCG's cement products were the essential materials for the construction of Thailand's infrastructure projects during that period, which have contributed greatly towards the country's modernization. Today, SCG comprises three core business units, namely 1) **SCG Cement-Building Materials**, 2) **SCG Chemicals** and 3) **SCG Packaging**. Since its inception, SCG has grown continuously and has earned widespread recognition as a role model for businesses, both locally and internationally.

SCG envisions to become a regional business leader with an emphasis on product innovation and excellent services to meet the customer's needs and enhance consumers' living standard coupled with encouraging sustainable growth for societies and communities where it operates.

SCG is committed to creating value for employees and all stakeholders. Under world-class management capability, SCG is the first in Thailand that achieves the world's ranking in the prestigious Dow Jones Sustainability Indices (DJSI) assessed by Robeco Sustainable Asset Management (RobecoSAM). SCG has been included in global ranking for 14 consecutive years since 2004. Such achievements reflect company's good corporate governance and uncompromising safety standards and its goal to become a regional business leader in accordance with SCG's vision.

Corporate Governance

Management:

SCG conducts business with responsibility, transparency and fairness as we prioritize:

- *Corporate Governance guidelines*
- *Code of Conduct*
- *Compliance*
- *Anti-corruption*
- *Anti-trust*

SCG's Governance and Nomination Committee is responsible for formulating corporate governance policies, while the Audit Committee is tasked with reviewing their implementation and ensuring rigorous auditing and assessment processes addressing all levels. SCG also seeks to foster its business philosophy of "Adherence to Fairness" into its organizational culture. Together, these elements form a self-defense mechanism and mitigate risks of unethical practices, frauds, and corruption that may affect shareholders, stakeholders, and the Company's business. The strong governance structure ensures that SCG's business can generate returns and long-term value to shareholders, reassure stakeholders, and strengthen SCG's own competitiveness for sustainable growth.

SCG has adopted international corporate governance guidelines, including the OECD Principles of Corporate Governance, DJSI Sustainability Assessment, ASEAN Corporate Governance Scorecard (ASEAN CG Scorecard), as well as regulations of the Securities and Exchange Commission, the Stock Exchange of Thailand, and the Thai Institute of Directors. SCG has announced its policy and guidelines related to compliance with good corporate governance to SCG workforce and contractors as shared guidelines for business activities in Thailand and in countries where SCG operates.

Key Roles and Responsibilities

Board of Directors:

The Board of Directors has the role and duty to formulate the corporate strategy and business policy as well as oversee management to ensure its conformity with principles of good corporate governance for utmost benefits of the organization and fairness to stakeholders.

Governance and Nomination Committee:

The Governance and Nomination Committee is responsible for formulating SCG Corporate Governance Policy and related guidance as well as monitoring their compliance and reviewing them to ensure correspondence with business reality and corporate governance trends in Thailand and other countries.

Audit Committee:

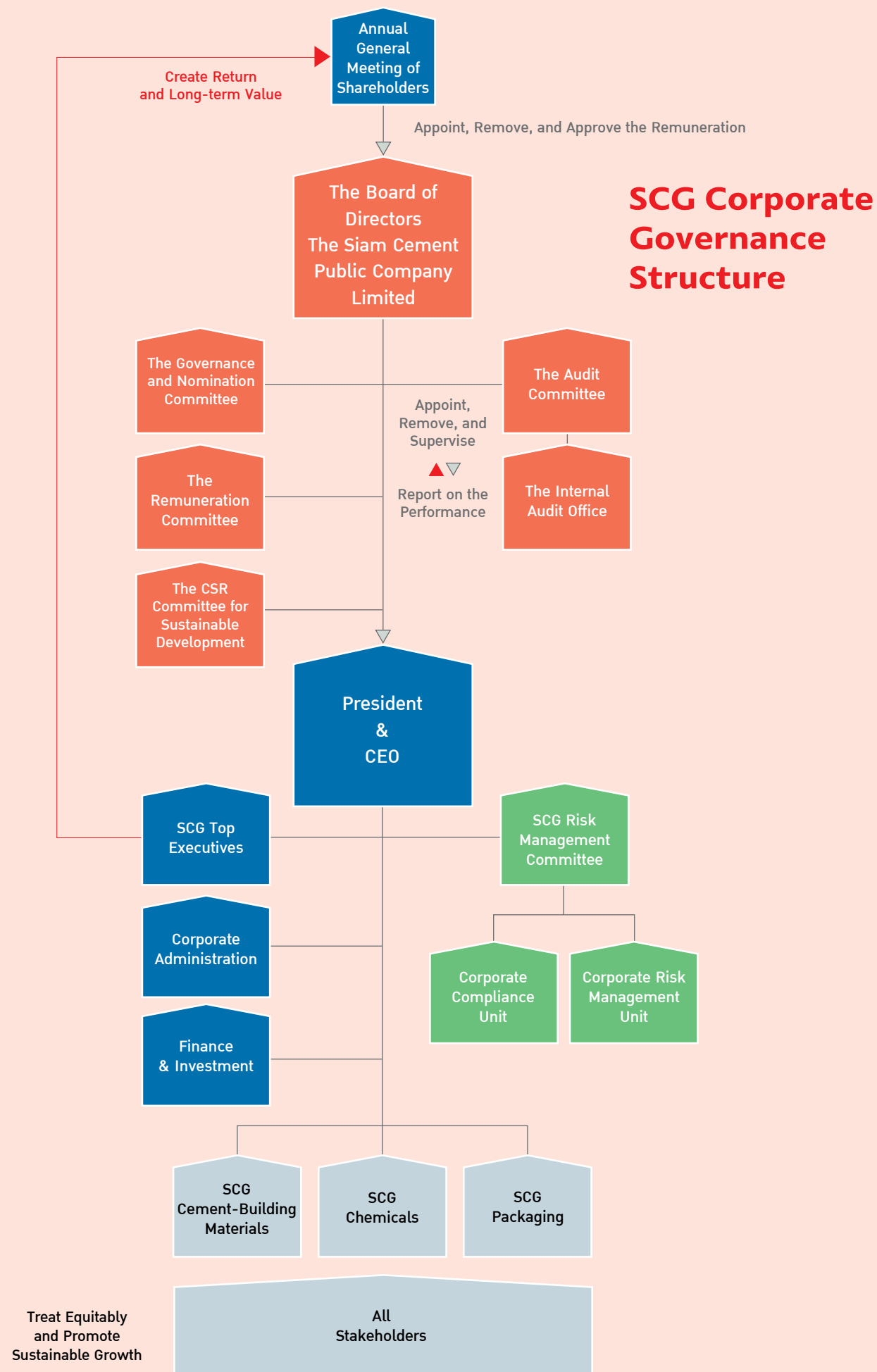
The Audit Committee is responsible for reviewing governance processes, risk management, compliance, and internal control, with the Internal Audit Office's advice to staff (First Line) and supporting units (Second Line), in accordance with the Governance Risk Compliance and Control (Integrated GRC) guideline.

SCG Code of Conduct

The Code of Conduct compiles good business practices rooted in SCG's Business Philosophy. It forms part of the rules and regulations to which all SCG employees are to adhere in their operations, and in so doing they contribute to the pride and reputation of the company.

Introduced in 1987 and revised to the 6th version currently in use in 2015, SCG Code of Conduct covers a wider range of regulations, policies, and guidelines on stakeholder engagement relevant to current contexts on issues including human rights and labour, environment, health and safety, anti-corruption practices, information disclosure, and trade competition.





Corporate Governance Policies in 2017

1 Compliance Policy:

Recognizing the significance of compliance on smooth and continuous business operations, SCG issued its Compliance Policy in writing for the first time in 2017. The policy requires its directors, executives and employees to strictly comply with the laws, affirms the Company's intolerance of any illegal transactions, and cultivates compliance consciousness as part of its organizational culture.

2 Anti-trust Policy:

In 2017, SCG prioritized trade competition in corporate governance operations. The SCG Compliance Management System (CMS) was applied to make sure that the executives and employees understand and can comply with the law. In parallel, measures were also enacted to prevent potential liabilities.

3 Insider Trading Policy:

In 2017, the management of inside information that might affect securities prices was prioritized as one of the most important governance issues. This was to ensure that inside information would not be used in such a way that affect stakeholders or violate the law and would not be exploited for the benefit of oneself or other persons.

4 Disclosure Policy:

In 2017, SCG conducted a review of its Disclosure Policy and updated it for greater clarity to ensure that disclosure of SCG information to the general public is done with prudence, and that information disclosed is accurate, not misleading in substance, and in compliance with the law and guidelines of relevant units.

5 Anti-corruption Policy:

SCG has cultivated anti-corruption consciousness as part of its organizational culture in accordance with SCG's 4 Core Values. This effort earned SCG the status as a Certified Company by Thailand's Private Sector Collective Action Coalition against Corruption (CAC) in 2013 and enabled it to pass a recertification assessment in 2016.

Sustainable Development Structure

The CSR Committee for Sustainable Development

- Formulate policy, guideline for implementation and allocate budget for sustainability-oriented Corporate Social Responsibility activities. Our guiding principle is we believe that people's better quality of life marks the first step leading to community and social development, which ultimately contribute to national development.

SCG Risk Management Committee

- Formulate policy, management framework and risk management plans.
- Define structure and persons in charge of risk management, as well as providing support, monitoring and supervision of compliance.
- Chaired by the SCG President & CEO, with President and Vice President of Business Units as members.

SCG Sustainable Development Committee

- Formulate and review policy, implementation, and targets of sustainable development.
- Listen to stakeholder's voices, particularly the experts.
- Formulate Materiality to engage stakeholders meaningfully.
- Currently chaired by the President of SCG Chemicals, with President and Vice President of Business Units and corporate functions as members.

In 2017, SCG has revisited the management structure of the SCG Sustainable Development Committee in order to align and integrate management of sustainability into core business strategy and plan. As a result, the new governance structure comprises three dimensions, Social Dimension, Environmental Dimension, and Economic Dimension. The SCG Sustainable Development Committee also has designated SCG Occupational Health & Safety Committee and SCG Energy Committee to report directly to the committee as they are the most concerned issues for manufacturing industry.

The core committees or working groups which regularly meet on a quarterly basis are as follows:

Occupational Health & Safety Committee

- Formulate policy, strategy and occupational health & safety management structure.
- Support, advocate safety practice, and manage safety-related risks.
- Cultivate basic work discipline, attitude, awareness and encourage learning in order to build safety culture for doing business with injury and illness free.

SCG Energy Committee

- Formulate policy and guideline on sustainable energy management, ensure adequate supply, energy conservation, renewable energy use.
- Communicate, advocate, support and drive energy conservation among the workforce so that the organization is a responsible energy user.

Climate Change Committee

- Formulate policy, strategy, target, work plan to mitigate Climate Change impact and reduce SCG's Green House Gas emission.
- Monitor Climate Change, especially potential risks that may impact SCG.
- Raise awareness and knowledge among the workforce of Climate Change.

Waste Management Committee

- Monitor and facilitate industrial waste management in compliance with Zero Waste to Landfill and 3Rs policy.
- Formulate guideline for SCG to manage waste in house at best possible effort.
- Promote and coordinate Reuse/Recycle through R&D and adding value to waste internally and outside SCG.

Water Management Committee

- Formulate policy, monitor, facilitate and issue water management guideline while making sure they are translated into actions, with concrete indicators to track performance.
- Promote and coordinate for industrial water to be Reused/Recycled through R&D inside and beyond SCG.

Eco Product Committee

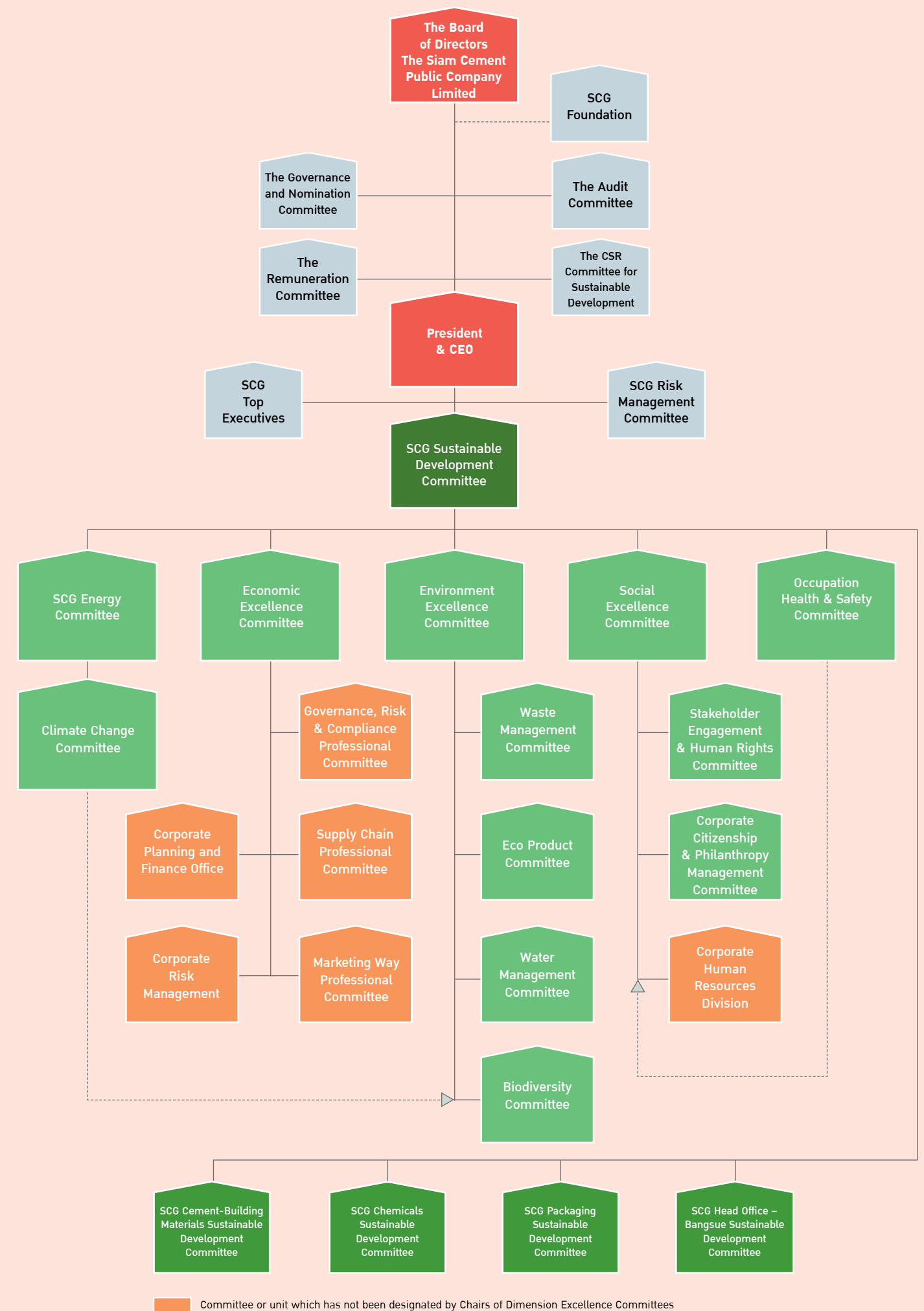
- Regulate value creation to Downstream Supply Chain to provide options of green products and services to the consumer.

Biodiversity Committee

- Formulate policy, target and SCG's manangement approach of biodiversity to conform with international guidelines as well as respect to local wisdom and stakeholders' lifestyle.
- Collaborate with external body both national and international organizations which have good knowledge and high capability.
- Communicate and support stakeholder engagement on biodiverisy conservation continually.

Supplier Development for Sustainability Committee (under Supply Chain Steering Committee)

- Formulate policy, strategy, targets and workplan for Upstream Supply Chain Sustainability, building upon the successful rollout of Green Procurement, SCG Contractor Safety Certification Program and SCG Supplier Code of Conduct.



SCG adheres to conducting its business with ethics, and responsibility to all stakeholders for sustainable mutual benefits. SCG has set its Sustainable Development Framework in accordance with global practices, covering three dimensions of economy, society and the environment, with corporate governance as an overarching principle. It is to ensure that operations by our business units are aligned.

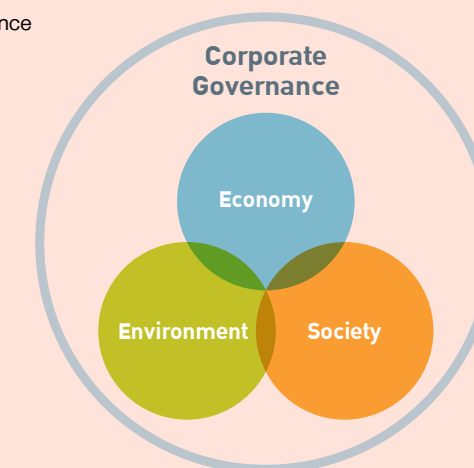
SCG is dedicated to creating value to the society through its environmentally friendly business operation. SCG is willing to share knowledge, experiences and success by engaging with all parties such as its relevant businesses throughout upstream and downstream, business organizations, institutes, including social and community-based enterprise to empower the society with strong and sustainability.

In 2016, SCG has launched its Environmental and Energy Policy to enhance efficient and effective implementation in all areas of SCG operations. The policy will also be applied when implementing any new project, modification project, due diligence as well as mergers and acquisitions.

Corporate Governance

Supervises our business management to ensure fairness, transparency and accountability in accordance with its business philosophy “Adherence to Fairness”.

- Good corporate governance
- Risk management
- Disclosure and reporting



Economy

Creates values not exclusively for profitability, but creates mutual benefits for all stakeholders.

- Contributes to national economic growth through value generated by our operations
- Income distribution among our stakeholders

Environment

Commits to conservation of the environment and natural resources, using resources wisely and maintaining ecological balance.

- Energy and climate change
- Water management
- Waste management
- Biodiversity and ecosystem
- Environmentally friendly products and services
- Logistics management

Society

Conducts business with ethics and concern for social responsibility. Participates in improving the quality of life where SCG operates.

- Community investment and donation
- Labor practices and human rights
- Human resources and human capital development
- Health and safety
- Stakeholder engagement

Sustainable Business Approach

1. Corporate Strategy and Sustainable Development

- SCG's vision is to be the business leader in the region, focusing on innovation and sustainability, and on the basis of the four business philosophies that have withstood years and strengthening our core values, the key drivers of sustainable development.
- SCG is committed to the balance towards the society and environment which allows business to grow sustainably in the framework of strong corporate governance. We are equally committed to creating value to stakeholders through our environment-friendly business conduct.
- SCG imparts knowledge, experience and success to create a sustainable value chain.

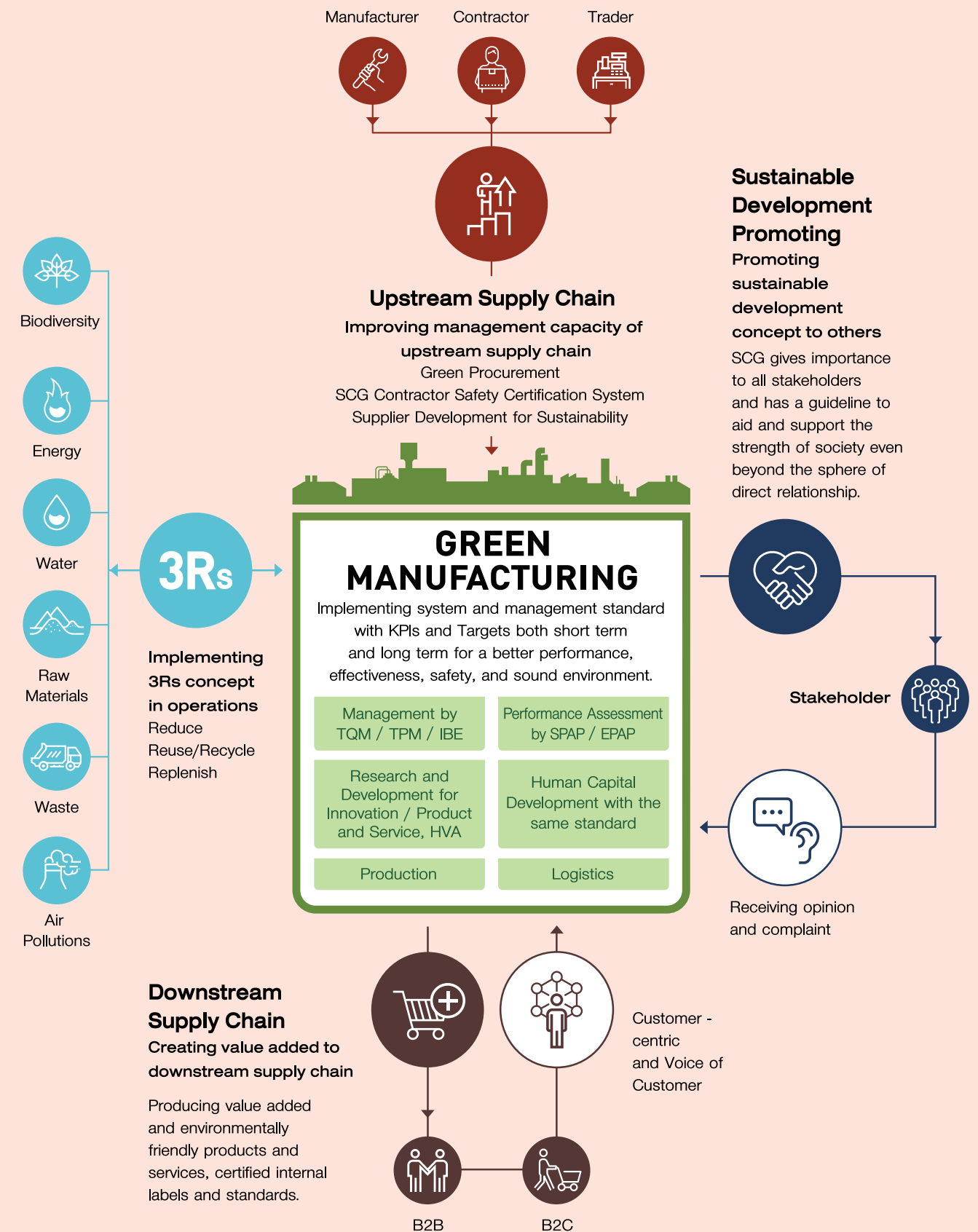
2. Balancing Sustainable Development and Business Performance

- SCG is confident that business can grow sustainably, the society and environment must grow sustainably at the same time, through Innovation for Sustainability. This means design and develop products and services and business models in response to the customer's needs.
- SCG persists with research and development to foster innovative products and services, to achieve High Value Added stage to satisfy the consumer. Even prices for products and services may be higher, but the return on investment will manifest over the long term, as the consumer's expenses are reduced and better utilization is gained.
- SCG supervises the production process in parallel with caring for the environment and community, by seeking to optimize resource use and constantly increasing production efficiency including recycling of waste, in line with the circular economy principle that will mitigate impact on the community, and help the community to become better off and sustainable.

3. Achieving Targets According to the Strategy

- Due to the range of sustainability issues and stakeholders, in 2017 SCG restructured its sustainability issue management framework from issue-based or thematic committee and working group into 3 Dimension Committees overseeing economic, social and environmental perspective to consider the overview of each dimension and streamline where these issues intersect. Moreover, in 2017, SCG reviewed Materiality to bring it in line with the current situation and emerging trends.
- 3 Dimension Committees will apply Materiality to define the strategy towards sustainable development, by assessing or measuring value in the process that takes into consideration financial figures of businesses or the organization, value to the stakeholders and the environment in the broader picture.
- SCG sets target per issue, and these targets include annual and medium-term plan targets. Materiality issues must have clear and challenging targets to address the society and environment. Targets must also be clear at the level of business, to enable the annual and medium term plans to align and to provide assurance that targets can be achieved at SCG level for sustainability.

SCG Sustainable Supply Chain



Glossary

TQM - Total Quality Management
 TPM - Total Productive Maintenance
 IBE - Integrated Business Excellence

SPAP - Safety Performance Assessment Program
 EPAP - Environmental Performance Assessment Program
 HVA - High Value Added Product and Service

SCG and Sustainable Development



Materiality

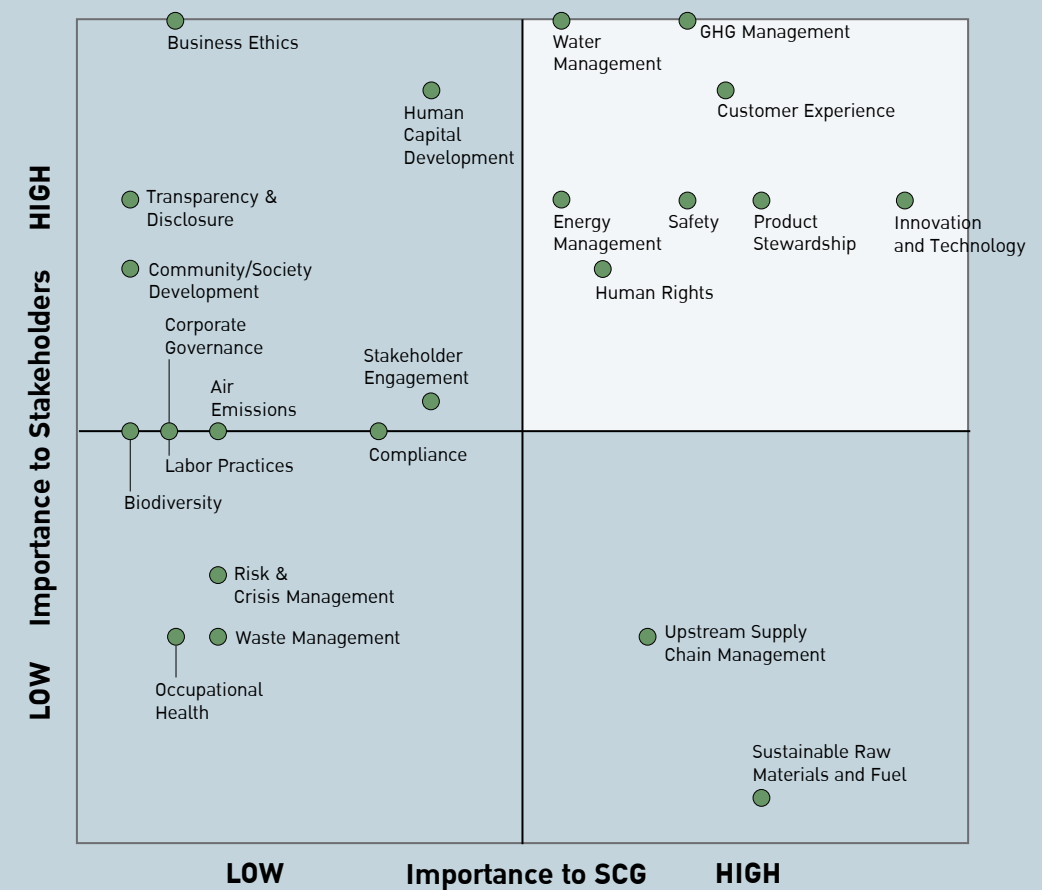
SCG places importance on management of sustainability issues. The process of assessment and prioritization follows the GRI Standards of Global Reporting Initiative (GRI). SCG has implemented the process of collecting and assessing sustainability issues through analysis of relevant issues across the entire value chain of SCG, comparative issues that industry

peers prioritize, issues that internal and external stakeholders prioritize, and issues that the international organizations prioritize in the sustainability context and global trend. Also taken into consideration SCG's business strategy, and risk factors the organization are facing now and in the future that may impact or transform into business opportunities.

Process of Materiality Assessment



SCG Materiality



Materiality in this Report

Materiality	Definition, Scope, Boundary	Location in this Report	Page
Safety	Effective safety policy, standards and program on safety management of process, prevention and mitigation of loss	- Health and Safety	44-51
Human Rights	Policy and process to ensure the organization understands and manages human rights risks of all stakeholders along the entire value chain	- Human Rights	52-55
Energy Management	Sufficient energy supply with appropriate prices, energy efficiency and conservation to deliver operational excellence and use of alternative energy	- Energy and Climate Change	64-69
Greenhouse Gas Management	Management of greenhouse gas emissions throughout SCG's value chain to reduce carbon footprint, including the management of business/operational risks and opportunities	- Energy and Climate Change	64-69
Water Management	Integrated water risk management, including physical risk, environmental risk, social perception risk and regulatory risk	- Water Management	70-75
Innovation and Technology	New and existing products and services, business model and processes, responding to global megatrends including change in technology and business environment	- Energy and Climate Change - Water Management - Material Use and Waste Management - Sustainable Products and Services	64-69 70-75 76-81 82-87
Product Stewardship	Responsibly managing the health, safety, and environmental aspects of raw materials, intermediate, and consumer products throughout their life cycle and across the value chain in order to prevent or minimize negative impacts and maximize value	- Sustainable Products and Services	82-87
Customer Experience	An organization that understands the needs of all customer groups, focusing on a good experience through timely delivery of a quality product and service at a proper price, that is safe and friendly to the environment and community	- Customer Experiences	88-93

Risk and Opportunity

Management Approach: SCG’s Enterprise Risk Management conforms with international standards, starting from formulation of strategy, operation, to investment in new business. At the same time, we raise awareness and increase efficiency in risk management, leading to value adding to the organization, shareholders, society, community and stakeholders. Risk assessment is conducted annually, so the organization can adapt promptly to rapid changes and increasingly complex and intense risk factors.

Risk Management Committee: SCG Risk Management Committee, chaired by the President and CEO, determine risk management structure and assign accountabilities for risk management, consider and approve risk management policies, strategies, framework, and plans and review and monitor the SCG risk profile.

- Risk Management Process:** Consisting of four steps:
- 1. Identification of business risk and opportunity
 - 2. Assessment of risk and opportunity
 - 3. Risk response
 - 4. Reporting and monitoring

Key Risks Management

Health and Safety Risk		
Risk:	Management Approach:	Page
• Doing business in a country where the environment and safety standards may not be up to standard may pose risk relating to health and safety.	• Enforced “9 Life Saving Rules” among staff and contractors to ensure safety at work and transportation. Raise awareness and impose disciplinary actions on violators to change behavior, this could build safety culture across the organization.	46-47
Climate Change and Environment Risk		
Risk:	Management Approach:	Page
• Climate change, global warming, drought and flood, and environmental impact that may disrupt business or damage the company’s reputation, or cost arisen from remedy and compensation.	• Increase the use of substitute fuel and alternative energy e.g. solar energy, fuel from waste.	66-69
	• Develop green products and services, e.g. advisory service of Green Building project.	87
	• Apply new management tool such as carbon footprint assessment, water footprint assessment.	86, 75
	• Continue to do CSR activities e.g. the completion of more than 75,000 check dams according to the Royal Initiative.	110
• Expressing commitment to Thai and international partnerships to the Paris Agreement’s goal of keeping global temperature rise to well below 2 degrees Celsius.	• Reduce greenhouse gas emissions per production unit towards the target of 10% reduction by 2020, the next target is during been formulating.	65
	• SCG started applying the recommendation of the Task Force on Climate-related Financial Disclosure (TCFD).	66

Geopolitical risk		
Risk:	Management Approach:	Page
• In recent years, political risk and risk of regional conflict have intensified, impacting economic stability and safety in international business, which may affect SCG’s business continuity.	• Closely monitor the situation and network with experts for insight to prepare risk mitigation plan and business continuity plan. • Conduct scenario analysis to plan appropriate response. • Business Continuity Management (BCM) of SCG and Business Units monitor, communicate situation update and alert those who might be affected.	-
Risk from Pricing Volatility of Fuel and Key Materials		
Risk:	Management Approach:	Page
• World crude oil price is likely to rise as oil producers OPEC and Non-OPEC reduce production capacity resulting in tightening of supply and the trend of higher energy and commodity prices such as naphtha, fuel oil, natural gas, coal.	• Increase the share of alternative energy e.g. solar energy, energy from waste and biomass to mitigate pricing risk of energy.	66-69
	• Develops high value added (HVA) products such as plastic for medical equipment and plastic parts for the automotive industry, with the aim to increase revenues and profits and to reduce the risk from raw materials price volatility.	85
Human Resource Risk		
Risk:	Management Approach:	Page
• Expansion of SCG business inside Thailand and in ASEAN results in a diverse workforce. In each country, there are changes in laws and regulations relating to labor, employment and human rights.	• Announce SCG Human Rights Policy which effectively covers all countries where SCG operates.	52
	• Conduct human rights due diligence process in every Business Unit. In 2017, SCG has put in place a mitigation plan and actions to prevent risks for all operations.	54-55
Emerging Risk		
Risk:	Management Approach:	Page
• Digital technology has and will play a crucial role in daily lives and businesses to the extent that it may affect SCG’s competitiveness. Yet at the same time, it could open up opportunity to develop new business adding value to the organization.	• SCG monitors and analyses digital trends to improve its business process, develop new opportunity and to conduct marketing strategy connecting conventional distribution with online channels. • Established AddVenture, a joint venture in start up technology to respond to customer’s demand and optimize digital technology including APPs and AI.	-
	Cyberthreat risk including data theft of products, services, trade secret and staff’s private data could result in large amounts of monetary impact and may harm the reputation, brand and credibility of the company.	-

Stakeholder Engagement

SCG recognizes the role of stakeholders who play increasingly important roles in our businesses. SCG has in place Stakeholder Engagement Policy and Guidelines that are compatible with the international norms of AA1000 Stakeholder Engagement Standard (SES) 2015 and CSR-DIW of the Department of Industrial Work, Ministry of Industry. These

guidelines mandate identification and prioritization of stakeholders corresponding with the impact and expectations they have towards SCG, format and platform to engage, and risk management strategy, as well as monitoring, evaluating and quarterly reporting to SCG CSR Committee for Sustainable Development and SCG Sustainable Development Committee.

Communication and Engagement with Stakeholders

Group of Stakeholder	Communication/Channel	Frequency	Topic of Interest	Action
Shareholder/ Investor/ Creditor	Annual General Meeting of Shareholders	Annually	<ul style="list-style-type: none">• Business performance and growth• Short-term/long-term strategy taking into account risks and challenges• Operate with transparency, and consideration of economic, social and environmental balance	<ul style="list-style-type: none">• Disclosure of full information on sustainability with transparency
	Annual Report and Sustainability Report			
	Analyze Conference	Quarterly		
	Investor Relations (IR) roadshow globally	Twice a Year		
	IR-administered Hotline and e-mail	24/7		
	website			
	Factory visit and CSR activities	Regularly		
Employee	Keeping staff informed through internal communication journal	Quarterly	<ul style="list-style-type: none">• Business trends and response• Job security and career path• Welfare and benefits	<ul style="list-style-type: none">• Adjust welfare package e.g. setting up the Health Centre• Re-employment of retired staff who can still contribute
	Staff meeting with executives	Quarterly		
	Employee satisfaction survey	Annually		
	Formal and informal opinion survey	Regularly		
	e-mail	24/7		
	WhistleBlower			

Group of Stakeholder	Communication/Channel	Frequency	Topic of Interest	Action
Supplier/ Contractor	Visit supplier/contractor to listen to problems and suggestions	Quarterly	<ul style="list-style-type: none">Occupational health and safetySelf-development to acquire competencies required to match the vision where SCG is heading	<ul style="list-style-type: none">Supplier Development Program for SustainabilitySafe driving skill improvement programSupport to comply with good corporate governance and human rights principles
	Study problems of supplier/contractor and improve their efficiencies	Regularly		
Customer	Listen to what the customers want to improve products and services	24/7	<ul style="list-style-type: none">Development of SCG's products and services that respond to customer needsInquiry on SCG's products and services	<ul style="list-style-type: none">Chatbot to communicate with customer 24/7
	SCG Contact Center			
	Facebook page			
	Architects Blog			
	Visit customer to listen to problems and suggestion	Regularly		
Community	Community visit and community relations activities	Monthly	<ul style="list-style-type: none">Advancing community wellbeingImpact of SCG's operations on community	<ul style="list-style-type: none">Livelihood and income generation projects e.g. the Fish Home, local product development
	Public forum to listen to community's point of view			
	Community satisfaction survey	Annually		
	Annual Report and Sustainability Report			
	Social media (LINE, Facebook, Twitter)	24/7		
	WhistleBlower			
Government Agency/Civil Society/ Academia	Opinion Panel	Annually	Information disclosure with completeness and transparency	<ul style="list-style-type: none">Collect inputs from the Opinion Panel to improve current practicesJoin the public/private sector collaboration in inclusive multi-sector cooperation, namely Pracharat ProjectsServe in committee/ working group of national institutions to contribute to nation-wide development
	Annual Report and Sustainability Report	Annually		
	Media outlets, discussion forums, academic events, public seminars	Regularly		
	Factory visit			
	CSR and engagement programs			

The Opinion Panel 2017

SCG Sustainable Development Committee organized an Opinion Panel to listen to information, recommendations and criticisms of stakeholders for seven consecutive years now. The annual 2017 Opinion Panel invited the prominent experts from the State, private business, development NGOs, and the media who have put forth various interesting suggestions.

Distinguished Panelists

- 1. Yuth Worachattthara
Chair of SET Sustainability Awards Committee 2017
- 2. Dr. Bantoon Setsirote
Member of the Sustainable Development Committee of the Prime Minister’s Office, and Executive Director of Governance for Social Development and Environment Institute (GSEI)
- 3. Dr. Ampai Harakunarak
President, Thailand Environment Institute
- 4. Winyou Wanichsirroj
Executive Vice President of Design 103 International Limited
- 5. Sorakol Adulayanont
Columnist and writer of “Fast Food Business”, Matichon Weekly



Recommendations from the Opinion Panel
Product and Service Development

- Circular Economy is the concept that addresses the problem of resource scarcity, therefore the focus should be on R&D, new products, services and businesses to enable circulation of resources for maximum value and benefit.
- Develop products and services for better living of people, as they seek to adjust to the impact of climate volatility manifested through drought, floods and natural disasters.
- The Paris Agreement impacts business competition going forward. Yet this should be captured as an opportunity to develop products and services that reduce Greenhouse Gas emissions, to stimulate the national economy.
- Encourage consumers to change their attitude and behavior towards sustainability, thereby expanding the market for green products and services.

Social Change

- Digital technology will increasingly replace human workforce. Striking a balance in SCG’s valuing of human capital is a critical issue that requires broader perspective on SCG’s workforce, people working SCG’s supply chain and people in the community.

- The newer generation of people are different from their older peers. SCG should find ways to attract the new generation to the workforce, and adjust the corporate culture to generate more inter-generational sharing and make sure the new generations have the capacity to keep up with changes.
- Managing a large organization may constrain the ability to adapt to external social contexts. SCG must think out of the box to do something different from the conventional success formula, and make SCG’s sustainability practice impressionable in people’s mind.

Sustainability

- SCG should be a role model for business organizations in the application of the Sufficiency Economy Philosophy to guide actions towards achieving 17 UN Sustainable Development Goals (SDGs).
- Foster collaboration with large business organizations in setting a common goal to address critical issues including reduction of greenhouse gas emissions, because collective action brings bigger results than individual effort.
- SCG has sound corporate governance under the current leadership. It is important to prepare the next generation of executives to carry on strong corporate governance in parallel with sustainability and business viability and growth, in country and overseas.

Dr. Bantoon Setsirote

“ SCG should streamline CSR into its core business and then expand the collaboration to involve other sectors. Sustainable development is not successful at present because it’s the state making efforts alone while the business sector is not as active.

From the SCG Sustainability Report, it is clear that SCG has covered completely all key aspects of sustainability according to issues and strategies laid out. That’s why it will be good to see SCG make CSR part of its core business and collaboration, which involves partnership with SCG’s own supply chain and the Public Private People Partnership. That way there

will be the force of synergy to drive national priorities such as cutting Greenhouse gas emissions, climate change, achieving 17 SDGs. Specifically on 17 SDGs, the United Nations Development Program just set broad goals without specifying how. Thailand has its own national strategy towards sustainability that has its basis on the Sufficiency Economy Philosophy. SCG is the business organization that shows successful application of the Sufficiency Economy Philosophy. There is expectation that SCG will be able to come up with a business model to prove that Sufficiency Economy Philosophy can lead to achieving all 17 SDGs.”

Yuth Worachattthara

“ Disclosure on sustainability performance data plays a part in boosting the confidence of investors, especially those investing in the stock market and institutional investors. The disclosed data must be based on facts. The positive impacts, in particular, will inform the public about how we support multiple stakeholders. On the negative impact side, the company must spell out policies and measures towards those impacts. If negative impacts are not mentioned, then disclosure is not complete, and the credibility of the report is undermined.

SCG has its sustainability practice in place to tend to the environment and natural resources,

climate change impact, social responsibility and compliance. This could be taken as an example for other organizations. SCG’s experience should be scaled up among big and small companies listed in the stock market, as well as among those in Thailand and abroad where SCG has operations. Sustainability issues of the future include how to retain talent, competency and ethical business culture, to pass on the experience of older generation executives and workforce to their successors, to monitor the situation to come up with solutions addressing short and long term issues and to adapt to the dynamics of global trends.”

Sustainability Performance





Corporate Governance Practice

One of the most vital philosophies responsible for SCG's smooth business operations and contributing to SCG's continuous growth and business expansion is its adherence to integrity and fairness to stakeholders. SCG prioritizes its 4 Core Values and Code of

Conduct over business customs and protocols in order to earn acceptance and trust from every party concerned and the general public as well as maintain its reputation and create business opportunities in the future.

Strategy

1

Management guided by corporate governance

Regularly enrich the Directors's knowledge on corporate governance-related issues to enhance their efficiency and enable them to serve as role models for executives and employees both in terms of corporate governance and adherence to the principles of corporate governance and SCG's Code of Conduct.

2

Formulation of policies, code of conduct, and guidelines for executives, employees, and suppliers

Review and revise SCG's corporate governance principles, Code of Conduct policy and guideline to keep them up-to-date and in correspondence with laws. The ultimate goal is to achieve good corporate governance both domestically and internationally.

Target

- Becoming an internationally-recognized model for corporate governance.
- Achieving full compliance in all operations.
- Achieving zero corruption.
- Promoting trade competition.



Management



SCG's Governance and Nomination Committee and Audit Committee are responsible for formulating policy and reviewing corporate governance processes, while compliance working units have been put in place to ensure rigorous auditing and assessment at all levels. At the same time, SCG has fostered an organizational culture guided by transparency and commitment to compliance for all kinds of operations.

The Company also keeps abreast of changes in governmental policies, laws, and regulations in countries where SCG conducts business to improve its operations and ensure their compliance in order to reduce risks of violation of and non-compliance with laws and regulations, which may affect stakeholders and SCG's business.

3

Compliance with SCG policies and guidelines

Implement SCG Compliance Management System to integrate compliance operations on the levels of the entire organization, business units, and companies.

4

Assessment, audit, and understanding enhancement

Implement Proactive and Preventive System, comprising Ethics e-testing for employees; three Lines of Defense for risk management and internal control (operational units, support and compliance units, and auditing units); corruption case studies; and regular enhancement of employees' understanding.

Actions in 2017

Message from the CEO

Policy Announcement: On November 20, 2017, Mr. Roongrote Rangsiyopash, President & CEO of SCG, announced SCG Compliance Policy in writing in Message from the CEO, which was communicated to all employees across the organization, in order to elevate the Company's compliance. The policy requires SCG's directors, executives, and employees to respect and

comply with the law and affirms the Company's intolerance of all illegal transactions. In addition, the policy also sets out to foster compliance consciousness as part of SCG's organizational culture to prevent risks that may occur to SCG, its directors, executives, and employees, which will lead SCG towards stable, balanced, and sustainable growth.

“ All SCG executives and employees have the duty to follow the Company's compliance policy and remain committed to compliance throughout every operation. Therefore, they need to inform themselves of relevant policies, guidelines, and regulations so as to be able to comply with them appropriately. The executives must also serve as role models and perform supervisory duties to ensure strict compliance.”



Roongrote Rangsiyopash
President and CEO, SCG

Policies in All Countries Where SCG Operates

Strategy: Formulating policies and guidelines for executives and employees to strengthen business operations.

Activity: In 2017, SCG formulated three major policies and guidelines related to legal compliance to raise awareness and establish guidelines for legal compliance in every country with SCG's business in order to elevate the level and efficiency of compliance.

1. Anti-trust policy
2. Insider trading policy
3. Disclosure policy

Anti-trust

Strategy: Applying SCG Compliance Management System to compliance with trade competition laws in order to ensure that the executives and employees understand and are capable of fully complying with them as well as to put in place an efficient monitoring system.

Activity: SCG and its employees have never been involved in a lawsuit or accused of violating trade competition laws and have never been penalized or fined for non-compliance with trade competition laws. Furthermore, no internal complaints regarding violation of trade competition policies or guidelines have been filed. Major developments related to trade competition in 2017 are as follows:

- SCG's anti-trust guidelines, do's and don'ts, and business behavior checklist were revised to serve as guidance for employees in actual operations.

- A seminar on the Trade Competition Act B.E. 2560 was organized to keep employees informed of latest developments and the revised act.

- A monitoring system for compliance with trade competition laws is being established.

In addition, SCG has published its trade competition policy on its website: <https://scc-th.listedcompany.com/misc/cg/2017/20171201-scc-cg-disclosure-enc02-th.pdf>

Accentuation of the Executives's Roles

Strategy: Encouraging all directors to serve as role models for the executives and employees regarding corporate governance compliance and adherence to SCG Code of Conduct.

Activity: Activities were organized to allow the Company's directors and high-ranking executives to perform their roles to the fullest. Examples are as follows.

- A seminar titled "Roles of Executives in IT Governance and IT Security" was held on October 4, 2017. SCG's directors and top executives exchanged their opinions with experts from the Thai Institute of Directors and the auditing firm KPMG Thailand.

- Mr. Roongrote Rangsiyopash, Chief Executive Officer, stressed the significance of communicating SCG Code of Conduct to new employees attending SCG Ready Together United training course and highlighted the roles of the Company's directors in raising awareness and serving as role models in adhering to SCG Code of Conduct.

“ A challenge for corporate governance in Thailand lies in performing the duty of company directors. As leaders of organizations, they must lead by example and expand the practice by creating an organizational culture and fostering consciousness in employees until they internalize it. Culture is a vital asset of an organization, without which violations and damage could arise at all times. SCG is a model organization with a strong organizational culture and leaders who are not only exemplary in their conduct but also take an active role in advancing anti-corruption efforts along with stakeholders in both governmental and private sectors.”



Bandid Nijathaworn
President and CEO
of the Thai Institute of Directors

Code of Conduct Communication and Training

Strategy: Equipping all employees with the capacity to apply SCG Code of Conduct to every decision while carrying out operations via communication methods and public relations with a wider reach.

Activity:

- To heighten awareness and foster an understanding of SCG Code of Conduct, the Company organized Janya on Tour 2017 and publicized its Facebook Fanpage “Dee Dee Club,” a channel for communications related to SCG Code of Conduct. The campaign featured Mr. Janya (a play on word on the Thai word for Code of Conduct), the mascot of SCG Code of Conduct.
- A workshop aimed at promoting an understanding and encouraging exchange of opinions on governance, risks, and compliance was piloted with employees of the Concrete Products and Aggregate Co., Ltd. (CPAC).

Ethics e-testing

Strategy: Utilizing an ethics test as part of a preventive measure to assess, examine, and create an understanding of ethics in employees.

Activity:

- All Thai employees, around 33,000 in number, are required to take an ethics test on a yearly basis and answer every item correctly. The results have shown that there are areas where gaps in understanding are evident and consultation is needed to ensure appropriate conduct.
- The e-testing administration was reviewed, and case studies were added to deepen employees’ understanding upon taking the Ethics e-testing. Workshops for employees in the factories of each business unit were planned to refresh their knowledge and encourage exchange of opinions.



Complaint Investigation

Policy: SCG allows its employees and external parties to file complaints and submit information about potential offenses, which may arise from non-compliance with laws, corporate governance, anti-corruption practices, SCG’s 4 Core Values, SCG Code of Conduct for Employees and SCG Code of Conduct for Suppliers. Complaints submitted are investigated, and penalties are imposed for any offense found.

Result: In 2017, a total of 31 complaints were filed, while five unresolved cases from 2016 were also processed. Of these, 27 have been resolved, while the remaining nine cases are being investigated; no case of corruption has been identified.

Anti-corruption Practices

Strategy: Disseminating anti-corruption measures among employees.

Implementation: The Guidelines on Appropriate Internal Control Measures for Juristic Persons to Prevent Bribery of State Officials, Foreign Public Officials, and Agents of Public International Organizations were disseminated among employees for their acknowledgment and adoption.

Of all completed cases, four cases were instances of non-compliance with the Code of Conduct, and nine cases were violations of the Company’s regulations which incurred insignificant damages, while the 14 others could not be substantiated.

One employee was dismissed, while four others were penalized in accordance with human resources regulations.

Summary of complaints in 2017 (cases)

Total number	36*
Resolved	27**
Under investigation	9

* The number includes five unresolved cases from 2016. The number of complaints lodged in 2017 is 31.

** Resolved complaints by categories

Code of conduct violations or dishonesty	4
• Conflicts of interest	4
• Corruption	0
• Human rights violations	0
• Anti-trust	0
• Use of insider information	0
Non-compliance with the Company’s regulations	9
Complaints that could not be substantiated.	14
Total	27



Health and Safety

Challenge:

SCG has committed to eliminate the number of injury and fatalities of both employees and contractors by continually control any risk from work with the SCG Safety Framework as the best practice. However, some problems have been found, for

example, an inadequate of on site monitoring, lack of the continuation of risk control. In some cases, they are lack of knowledge and awareness of safe working to prevent themselves from dangers and conduct safe behavior for their good health.

Target

- Zero fatality every year.
- Reduce Loss Time Injury Frequency Rate in 2017 and 2018 to 0.030 and 0.023 respectively, and to be zero by 2022.
- Continuously reduce Occupational illness and disease.



Management Approach:

Since 2007 SCG has been employing a management evaluation tool named “Safety Performance Assessment Program (SPAP)”. In addition, Life Saving Rules were instituted in order to prevent employees and contractors from serious accident that may

result in a fatality. These aim to embed safe actions which are the fundamental of Total Safety Culture of SCG in Thailand and countries where SCG operates.

Strategy 1

Building safety-conscious behavior through Life Saving Rules

The announcement of Life Saving Rules, which everyone in SCG both in Thailand and abroad must follow and not violate can create an awareness in Safe for Self of employees and contractors. They are therefore apprehensive on the danger of severe accidents or fatalities in order to embed the safety behavior for the same practices and expand the idea to help others.

2

Risk Control with discipline

Review and evaluate risk at work that may lead to fatality or serious injury. For example, working at heights (over 1.8 meters), working in proximity of or in contact with rotating point or clamping point of machine, work relating to energy and electrical systems, transporting of goods or passengers’ ride. This strategy also includes improvement of operational systems and constant monitoring to ensure compliance.

3

Visible safety leadership

Encourage executives to demonstrate behavior that expresses safety leadership and to act as role models in safety practices to employees and contractors. People should perceive that executives care and prioritize the safety of the workforce. Leadership in safety should be subject to regular evaluation for improvement.

4

Advancing safety standards wherever SCG operates

Apply SPAP tools in countries where SCG operates by building a model for businesses in pilot countries and expanding good practices to scale up effectively. The goal for all pilot companies has set to achieve SPAP Level 4 (Succeeding) or higher in 2018 which is more challenge than the rest in regional.

Actions in 2017

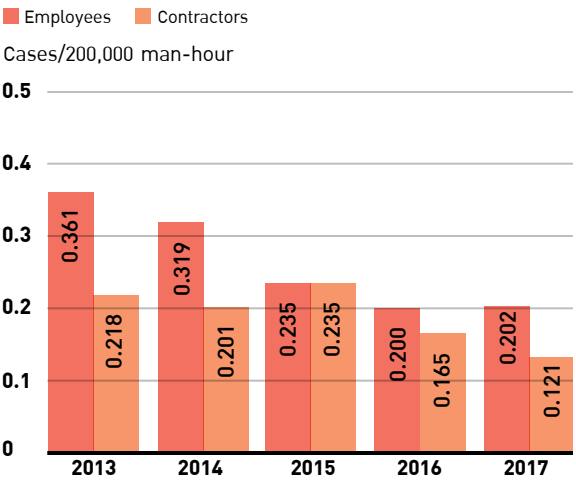
Life Saving Rules

Challenge: Employees and contractors are not yet fully aware of safety, and therefore operations are at risk of accident and injury.

Management Approach: Mandating 9 Life Saving Rules to reinforce the awareness and change employees and contractors' behavior to make safety a priority at work. The Life Saving Rules (LSRs) were announced with immediate effect in January 2017, as a common agreement of all SCG companies operating in Thailand and abroad, and be a part of contract with contractors. Violation of Life Saving Rules subject to disciplinary action as prescribed. Furthermore, in collaboration with Expert, SCG developed a survey to measure the level of understanding and attitude towards Life Saving Rules. The result from the survey presented area for improvement and obstruction in health and safety implementation program.

Indonesia organized a contest titled "SCG Indonesia Life Saving Rules (LSRs) Best Practice Awards 2017" with the objective of promoting LSRs

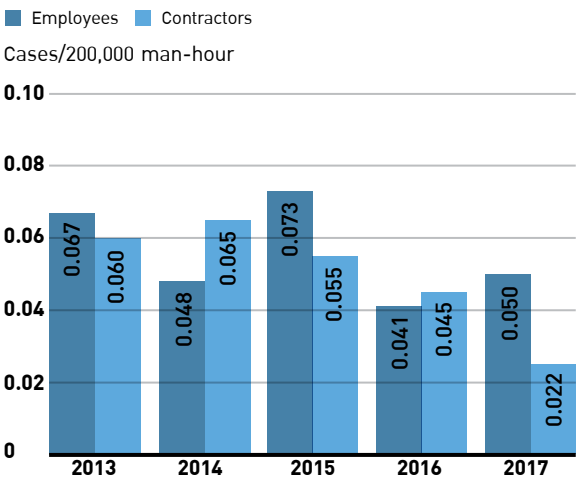
Incident Frequency Rate



implementation. Under the contest, we asked employees to work in groups to present ways to improve operational steps and bring them into full compliance with Life Saving Rules, and then replicate the practice for a wider reach. The contest was at the business level, and selection of Best Practices at the SCG Indonesia level. A total of 34 groups of employees joined the contest.

Result: In 2017, 577 persons (26 employees and 551 contractors) were found violation of the Life Saving Rules and punished according to SCG' s disciplinary actions. 87 percent was violation of

Loss Time Injury Frequency Rate

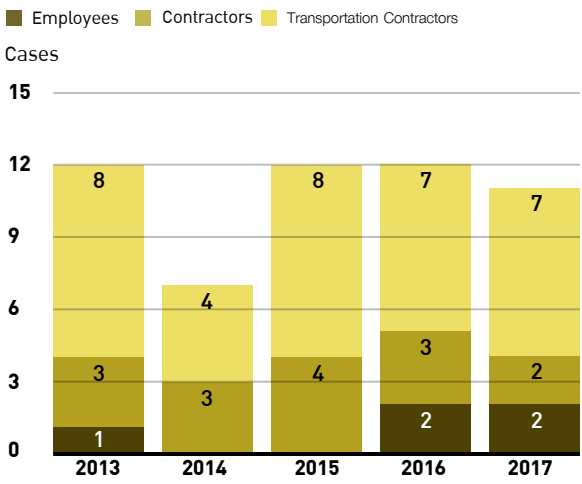


drinking alcohol* before driving or working rule. Since the on-site inspection was excessively performed, the numbers of serious accident from motor vehicle were potentially to zero.

However, another violation of Life Saving Rules has been found, for example, the usage of fall protection equipment when working at height, and wearing a helmet while riding or sitting on the motorcycle. SCG focused on the sharing knowledge and promoting a campaign to motivate the wearing of safety equipment as well as inspecting the safety system continually.

*SCG Alcohol Limitation = 0 milligram percent

Fatality Cases



The 9 Life Saving Rules on a card that employees can carry with them at work.

The Lifesaver™ Rescuing a Drowning Girl

The Lifesaver™ is one of many projects in the drive towards safety, encouraging employees to be a life saver, helping one another look out for safety for everyone.

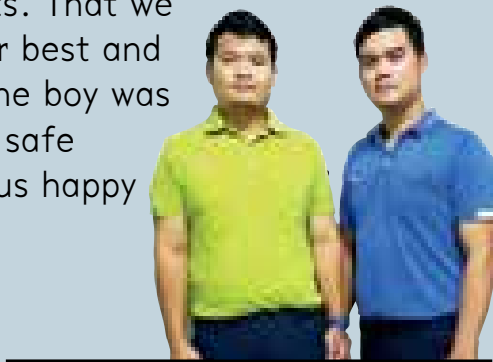
In 2017, the care, awareness and behavior of safety procedures were uppermost in mind and action outside the organization as well. In the face of accidents outside of work, SCG employees are equipped and willing to save others lives too, as with the case of Mr. Anuchit Bamrung. On July 9, 2017, Mr Anuchit, an employee of Grand Siam Composite Co.,Ltd rescued a child from drowning at Lamson Beach in Klaeng District, Rayong. Mr Anuchit came across the accident and managed to conduct CPR and first aid according to the training he received from the company, and was able to save the life of the child. The incident took place on the day when family and friends of Mr Anuchit were collecting rubbish from the beach, a voluntary activity that they do to keep Lamson Beach clean.

“ Helping others may not be as big an issue as saving a life. We can do our part with small things that we can do well and regularly, which include warning our colleagues or one another about safety, or collecting rubbish to keep the beach clean and return beauty to nature.”



Mr Anuchit Bamrung
Grand Siam Composite Co., Ltd.

“ At that moment we were both so nervous. But we were trained and taught steps and sequences to follow. So we were not panicking at the scene. After helping the boy and finding out later that he's safe, we were glad and relieved for his parents. That we did our best and that the boy was finally safe made us happy



Nuttarvut Timpletak
Siam Kraft Industry Co., Ltd (Ban Pong Complex)
Smith Sengkrue
Thai Paper Co., Ltd.

S.E.R.T. Team Rescuing a Drowning Boy

S.E.R.T. (SCG Packaging Emergency Response Team) is a project to prepare employees to respond to any emergency in order to reduce risk and protect life and property. The project has been set up to tackle and control any situation quickly and accurately, and to prevent the outbreak of the situation. In addition, not only the emergency response has been done in the facility, but also other people can benefit from the project.

On October 29, 2017, Nuttarvut Timpletak from Siam Kraft Industry Co., Ltd (Ban Pong Complex) and his family, and Smith Sengkrue from Thai Paper Co., Ltd. went to Cha-am, Phetchaburi for their holiday. During their stay in the resort, they found that a 3-year old boy was drowning. They saved the boy's life by doing CPR for 10 minutes until the emergency car arrived and sent the boy to the hospital. He was hospitalized and was safe.

Reducing Accidents Relating to Working with Machines

Challenge: In most cases, accidents from working with machines were caused by risk assessments that did not cover all aspects of the task. Training curriculum for staffs and contractors did not address all aspects of danger prevention, and lack of clarity in operating procedures.

Action: Review and set standards of all key tasks, safety standard of machinery, how to work safely and training.

- **SCG Cement-Building Materials** set up a committee on safety when working with machines group to conduct a review and set standards on machine safety and safe work methods, particularly the isolation of energy, locking and tagging. Then the Committee followed up on the machine improvement project of every single factory, prepared energy isolation equipment and safer work practices.

- **SCG Packaging** implemented Zero Accident by Machine (ZAM) project which involves asking all employees to investigate and identify risks of working with machines, in order to use the inputs to work out ways to prevent harm. With this exercise, the employees become aware of every vulnerable spot. They have developed a manual which identifies the whole set of risks involved in every single machine and a manual of safe work practices, along with one general curriculum and task-specific curriculum.

Result:

- **SCG Cement – Building Materials** completed machine improvement in 15 factories – 382 out of a total of 421 machines, equivalent to 90% completion.
- **SCG Packaging** completed machine improvement in 12 factories - 71 machines out of a total of 150, or 47% completion.

Occupational Health

Challenge: Exposure to hazardous chemicals and physical may affect to the health of operators over the long term is a risk which SCG cares about and addresses, through the organization-wide risk assessment and management.

Action: **SCG Chemicals** applied the Industrial Hygiene Management System according to the guidelines of the International Labour Organization (ILO OSHMS 2001) since 2010 until now. At present all 23 units/companies within SCG Chemicals are in full compliance – covering all aspects ranging from Walk Through Survey, Health Risk Assessment, and Health Risk Reduction and Control program. These steps enable us to define measures of health risk control, and Health Surveillance Program in a systematic manner, to ensure employees and contractors are cared for, in relation to exposure to harmful factors, and that this exposure will have no long-term health impact.

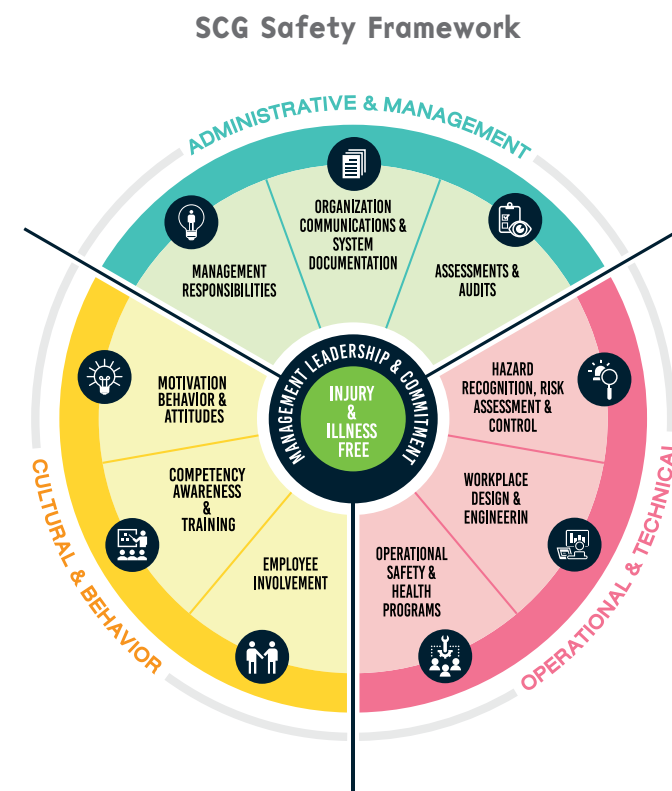
Result: Development of a health risk assessment manual, and its expansion to other business units. Pilots are being implemented in four companies under **SCG Packaging** and **SCG Cement-Building Materials** in Thailand and abroad. SCG has planned to expand its operation to be complied with the Industrial Hygiene management system throughout the organization by developing a system to collect, analyze and report any illness, or occupational diseases. Then, the health care of workers would be implemented systematically.

Visible Safety Leadership

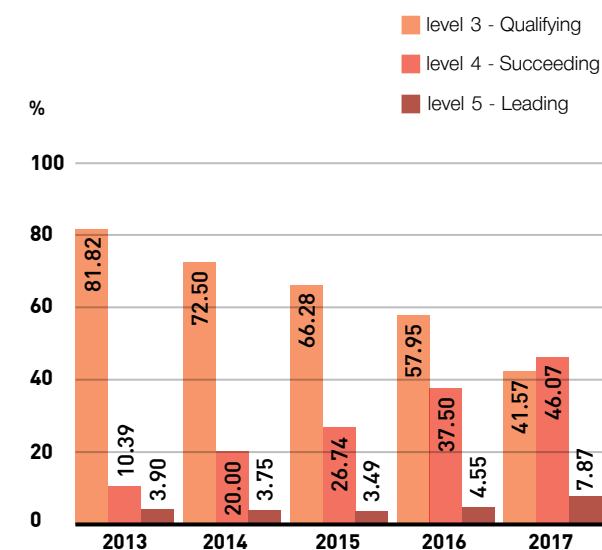
Strategy: Executives/managers must demonstrate safety leadership by express how much safety is important to or commitment and expectation that can get from safety result.

Action: Develop tools to assess safety leadership, along with guideline to improve leadership of executives individually. Leadership must include convincing everyone in the organization to recognize safety as a core value, and give concrete support to safety-related actions. It also means that staff members have formed the habit of safe work practices, and help to look out for one another for safety to prevail across the organization.

Result: Result of assessment of 512 employees at the managerial level in 2017 (out of the total of 1,932 in managerial level) shows about 50% are at an acceptable level.



Number of SPAP-Certified companies in Thailand, 2013-2017



- In 2017, there were 48 companies in Thailand passed the Safety Performance Assessment Program, (SPAP) in level 4 (Succeeding) which was 53.94%.

- As for other companies operated in regional, there were 17 companies passed the Safety Performance Assessment Program, (SPAP) in Level 3 (Qualifying) which was 45.95 %.

- Pilot companies that implement SCG Safety Framework in regional include;

- **SCG Chemicals;** at TPC VINA Plastic and Chemical Corporation Limited (TPC VINA) in Vietnam.

- **SCG Packaging;** at Vina Kraft Paper Co., Ltd (VKPC) in Vietnam.

- **SCG Cement-Building Materials;** at Kampot Cement Co. Ltd (KCC) in Cambodia.

Enhancing Safety at Prime Group

Challenge: SCG has expanded manufacturing bases throughout ASEAN. Many companies we partnered with are already active business entities such as the Prime Group in Vietnam. In 2013, the company had a total of six factories manufacturing and selling floor tiles and wall tiles, employing 3,300 people on staff. At the time, the fleet of machineries were old and not well maintained. Electricity cabinets were unsafe and work space untidy. Workers lacked awareness of safety, and therefore at risk related to safe work practices and work at height accidents.

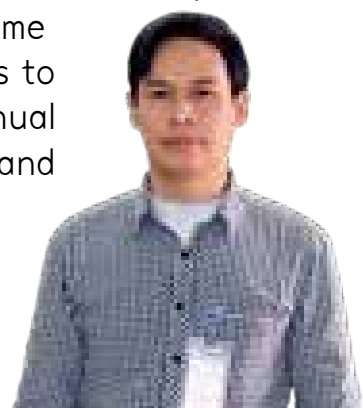
Management Approach: SCG started to improve the work environment using the 5S principles, along side OHSAS 18001 and SCG Safety Framework in the factories. In 2017, all factories

were certified OHSAS18001 compliant and have managed SCG Safety Framework systematically until they reach the target of SPAP Level 3. (Qualifying) A range of additional measures have been implemented including training on safety, KYT activity, Job Safety Analysis, mandating staff to use Personal Protective Equipments (PPE), distribution of safety helmets to all staff to bring down accident rates from outside of work, and producing public relations safety materials.

Result: Since 2013 when SCG began its joint venture and improving systems and safety measures, the accident rates have been reduced consistently, from 2012 when loss time due to injury was as high as 42, to only 7 in 2017.



“ From the moment SCG stepped into the joint venture, the first priority is safety, and with the support of the leadership, safety is a must as minimum requirements. At the same time, SCG Safety Framework provides clear guidelines to manage, allowing supervisors and me to develop manual operating and safety practices with clear direction and guidance. It made my job easier and my colleagues were very cooperative. In this past year my company was certified SCG Safety Performance Assessment Program (SPAP) Level 3 (Qualifying).”



THĂNG - PHẠM VĂN
Safety Environment Quality
and Productivity Manager,
Prime Group

“ With the application of SCG Safety Framework in the company, risk assessment and safety checks are required before starting work. That way we get to know at what stage of the job is there a risk for accidents, so that we can prepare the necessary equipment, tool or review the job steps to make it safer. Doing the 5S is an incentive to prepare the right equipment and tool, and to reduce the time to finish the job faster. Adjusting the work approach this way gives my colleagues and myself the confidence that we will not come across accidents at work. We can go home to our family safely.”



HÙNG - TRẦN MẠNH
Production Staff, Prime Group

Human Rights

Challenge:

Implementation of SCG Human Rights Policy that includes vulnerable groups such as employees, children, women, people with disabilities, indigenous people, local community, contractors, migrant workers, which may be exposed to possible human rights violation in activities by SCG, stakeholders in the business value chain, or joint ventures where SCG has no management control.

Management Approach:

SCG announced its Human Rights Policy, which is fully conforming to the United Nations Global Compact (UNGC) and the International Labor Organization (ILO) Declaration on Fundamental Principles and Rights at Work. The policy is effective in every country where SCG operates and Human Rights Due Diligence Process is also in place to ensure that the way SCG does business abides by the principles of human rights protection.

Strategy 1

Conformity with “SCG Human Rights Policy”

Monitor and supervise SCG’s direct business activities, and support the work along the business value chain – business partners, vendors, contractors, joint venture partners – to ensure conformity with human rights principles, and compliance with local laws and international obligations of the host country.

2

Human Rights Due Diligence Process

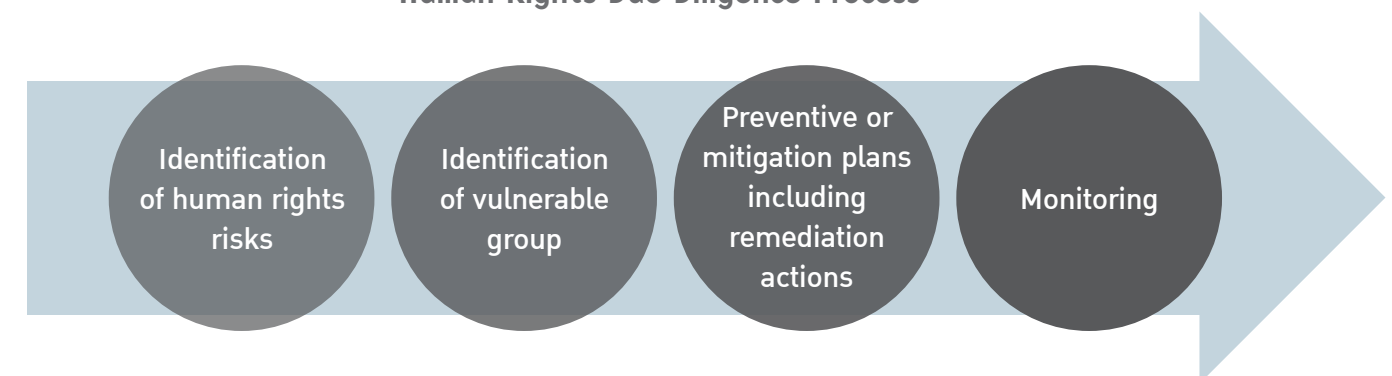
Conduct the process consistently. The process consists of identifying human rights related risks, vulnerable groups, determining prevention or mitigation plan, remediation actions plan, and monitoring.

Target

- A role model in relation to human rights, actively supporting and promoting the business value chain both directly by SCG own operations and indirectly by suppliers/ business partners/service providers and joint ventures to be aware of, to protect and to respect human rights. Issues identified as risks are 100% covered by the mitigation and preventive plan, as well as the plan of remediation actions.



Human Rights Due Diligence Process



Here, whether you are a Thai or foreign employee, everyone has the same rights and benefits. They get the skill advancement for the job, which is something that stays with them wherever they go. We have training on workplace safety practices, first aid, and riding the motorcycle safely. Working involves learning, on the job training and actual practice.”



Mr. Thaw Lay

Operation Staff, Myanmar Nationality,
Dyna Packs Company Limited.

Actions in 2017

Risk Assessment and Management

Management Approach: SCG assessed human rights related risks on the basis of severity and likelihood. Results of the assessment are classified in three levels: low, medium and high. Correspondingly, the identified risks form the basis of mitigation or preventive plan, remediation actions and monitoring.

Result: SCG has completed an assessment of human rights related risks fully covering employee, community, contractor along entire value chain in order to identify risks and vulnerable groups such as children, women, people with disabilities, indigenous people, local community, migrant workers, and to draw up prevention, mitigation and remedy action plans, and monitoring. In 2017, key risks are:

Scope of SCG’s Actions and Implementation where SCG has full management authority

Risk	Mitigation Plan and Remediation Actions
Safe work environment, compliance with rules, regulations and SCG Safety Framework	<ul style="list-style-type: none">• Communicate, inform and instill safety consciousness under SCG Safety Framework• Employees and contractors must comply with Life Saving Rules, which impact performance evaluation and remuneration• Evaluate effectiveness and safety performance by Safety Performance Assessment Program(SPAP)
Quality of life of the local community, including economic and social wellbeing and the environment	<ul style="list-style-type: none">• Mandate all operational sites to have a unit to manage impact of business on community, and advancement of community quality of life, also to address the issue of quality of life, and report quarterly to the SCG Sustainable Development Committee• Make available channels to listen to the community’s opinion attentively and regularly• Organize projects to increase the capacity and quality of life of community members (see details in Community Involvement Chapter)

Scope of Actions of Suppliers/Business Partners/Service Providers

Risk	Mitigation Plan and Remediation Actions
Safety in logistics (transporation of products and material use in manufacturing)	<ul style="list-style-type: none">• Safe driving practice through training in accident preventive driving curriculum to all drivers by SCG Skills Development School, under the management of SCG• Support and develop the capacity of all drivers to become a Smart Driver, who can work in safety, able to help reduce road accident, take pride and be a role model to inspire their peers• Install the GPS system to control driving behavior focusing on road safety components such as speed, navigating through black spots, prohibition of parking on road shoulder, control the duration of driving
Labor rights in relation to forced labour practice, and compliance with the law governing employment of migrant workers	<ul style="list-style-type: none">• Select suppliers on the basis of their commitment to SCG Supplier Code of Conduct, and capacity to operate for sustainable growth• Risk assessment that covers human rights performance of suppliers, organize a capacity development for suppliers to commensurate with the risk level• Evaluate suppliers on the basis of compliance with SCG Supplier Code of Conduct and use the result to update the Approved Vendor List• Facilitate a channel to receive complaints, red flagging unusual events through the SCG Whistleblower

Scope of Actions by Joint Venture where SCG has no management control

Risk	Mitigation Plan and Remediation Actions
Labor rights relating to employment conditions of joint venture where SCG has no management control	<ul style="list-style-type: none">• Declare SCG’s commitment to do business with organizations that comply with human rights principles• Provide inputs in the formulation of employment and labor rights policy and monitoring to ensure compliance, in the capacity as director representing SCG• Provide knowledge and support efforts to conform with human rights principles• Facilitate a channel to receive complaints, red flagging unusual events through the SCG Whistleblower

Employment of People with Disabilities

Management Approach: Compliance with labor laws, promoting and advancing the quality of life of people with disabilities. SCG has always supported the employment and livelihood of people with disabilities.

Result: In 2017, SCG employed and supported the livelihood of 300 people with disabilities through various projects, from 41 in the previous year:

- The project to employ deaf teachers – 12
- Livelihood Project for People with Disabilities in Lampang and Songkla – 147
- Don’t Drive Drunk – 12
- Ban Maenok Learning Center (Occupation of disable people project) – 30
- Other employment in various sites – 99

Promoting Gender Equality

Management Approach: According to the effective Thailand Gender Equality Act B.E.2558 since 2015 which protects discrimination on the basis of gender, SCG has been monitoring and communicating the Gender Equality Act to inform stakeholders, for them to use as a guideline. On its part, SCG is an equal opportunity employer in relation to gender equality, employment, remuneration, career path, and working conditions.

“ SCG realizes that every employee is the most valuable capital in the organization. SCG cares of all employees’ wellbeing for all genders and ages as well as treats its employee according to gender equality principle. This is obvious in the fact that in recent years, more women are visible at the management level of SCG, which sounds good and also inspires women to step forward to management position. With social changes and technology advancement, women have more opportunities to demonstrate their ability at work in SCG.”



Chantanida Sargaphuti
Director, Corporate Planning and Finance Office



Employee Caring

Challenge

SCG's top priority is our human capital, because employees drive the organization towards success and sustainability in every business operation in any countries we operate. Currently, ASEAN labor market is characterized by an imbalance that results in labor supply competition in

certain areas, while pay structure in certain countries has been adjusted upward considerably. SCG is thus facing the risk of attracting talents to work with SCG, and the challenge of caring and retaining employees.

Strategy **1**

Build organizational value to attract talents

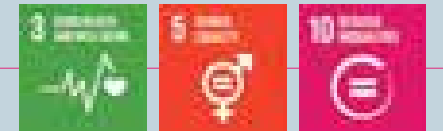
Strive to make the organization a place where people aspire to work for, to attract talents of multi-disciplines and all levels to join SCG's workforce.

2

Care in an inclusive and fair manner for employees to bond with the organization

Promote the quality of life and active participation of staff, creating a sense of unity within the workforce, that everyone advances together towards the shared target and success, for this to become the organizational value.

Target



- A role model organization in its caring for employees, and an innovation-oriented organization appealing to work with, as indicated in the scores employee engagement survey in the top tier of 25% among leading companies.

Management Approach

To build the value and make SCG an organization everybody wants to work with, attracting and retaining competent employees, and caring for employees in an inclusive and fair manner. For this purpose,

Employee Engagement Survey provides indicators of success and reflection of situation and giving us inputs to update and refine our human capital management system.



Actions in 2017

Employee Engagement Survey

Result:

- In 2016, we conducted Employee Engagement Survey covering 25% of the entire workforce. We will conduct this survey continuously to cover the majority of employees in 2018.
- The 2017 annual survey by employment agency JobsDB Thailand showed that SCG is one the top companies that respondents say they aspire to work for in Thailand.

Health Center

Strategy: Include all employees, and promote their well-being at workplace, engage employees' participation and bonding with the organization.

Action: We built a Health Center inside the compound of SCG Head office. A modern five-storey structure with 4,180 m² utility space offers integrated health and wellness service package to SCG staff. There are two sections starting with Health Care located on 1-2nd floor, with medical doctors and staff from Ramathibodi Hospital to operate general practice and specialized services including physiotherapy. This section is opened Monday-Friday 07.30-16.30 hrs. The Health Club is located on the multipurpose space on the 3rd floor, and full-range fitness facilities are on the 4-5th floor. Activities such as Zumba fitness, yoga classes by professional trainers are organized in this area. The Health Club is opened Monday-Friday 05.00-21.00 hrs, and Saturday-Sunday 08.00-20.00 hrs.

Result: The Health Center has steady flow of drop-ins since opening. But the Health Club attracts up to 350 users per day, especially in the evening after work hours.



Re-employment Program

Challenge: Each year a sizeable number of employees reach mandatory retirement age. However, many of these retirees have specialized knowledge and competency, and they are healthy enough to mentor younger peers on staff quite effectively. SCG recognizes the importance of retaining experienced and highly skilled people to contribute value adding to the organization.

Action: SCG launched the Re-employment Program to facilitate post-retirement hiring effective from 2017. Implementation is subject to consideration of specific types of jobs and requirement, and the number of retirees per year.

Result: In 2017, under the Re-employment Program, three executive-level retirees were re-employed. It is anticipated the number will rise contingent upon matching of requirement and competency.



Employee Development

Challenge

In light of the Volatility, Uncertainty, Complexity, Ambiguity (VUCA) in today's highly competitive world, SCG is running a risk of developing employee

performance competency, necessary to keep abreast of the constant shifts in business directions and situation.

Strategy 1

Creating the Learning Platform in the same Standard across the Region

Adhering to the Role-based Competency framework enables employee effectiveness to be truly beneficial for business and prepare the ground for handling challenges of rapid business growth.

2

Building the Learning Culture and Supervisor's Role in Coaching

Individual employee is accountable for propelling the learning and self-development with support from supervisor in the form of counselling and advices.

Target



- In 2018, 100% of employee in Thailand will be given a Competency Assessment and Individual Development Planning (IDP) in the platform of Learning Management System (LMS).
- The Competency Assessment, Individual Development Planning (IDP) through the Learning Management System (LMS), 70:20:10 Model for Learning and Development will be extended to include the professions of human resources, logistics, and procurement in Indonesia, Vietnam, and the Philippines.

Management Approach

SCG creates learning agility for employee to acquire new skills and knowledge through basic elements and learning culture that SCG has promoted and embedded for, aiming at instant access at any hours for greatest efficiency and utmost effectiveness such as Role-based Competency, 70:20:10 Model for Learning and Development, Learning Management

System (LMS) under the clear schemes of both Medium Term Plan and Annual Plan as well as the close supervision of the committee and office, accountable for the learning of employee, comprising Professional Academy Committee, Business Unit Technical Academy Committee, and Learning Council Committee.

3

Connecting the Employee Learning to Talent Management and Human Resources Mechanisms

Learning shall be sustainably propelled with utmost effectiveness for the employee, to be promptly able to support the necessity of business as well as to bridge the connection between employee learning and development program with other Human Resources frameworks such as the Career Development and Talent Management System, etc.

4

Developing Competences for Employee and Leader

Knowledge and competence of all employee shall be recognized to gain competitive advantage including the development of the leader in the required areas of attitudes, knowledge and competence to further advance the subordinates' potentialities to be the Company's driving force.

5

Creating supporting Factors for Learning

Operating the Learning Management System (LMS) with the combined application of digital technologies such as E-Learning, Micro Learning or Gamification will boost up effectiveness and promote the utmost efficiency in learning across the regional community.

Actions in 2017

Program Development for Employee in Management Level

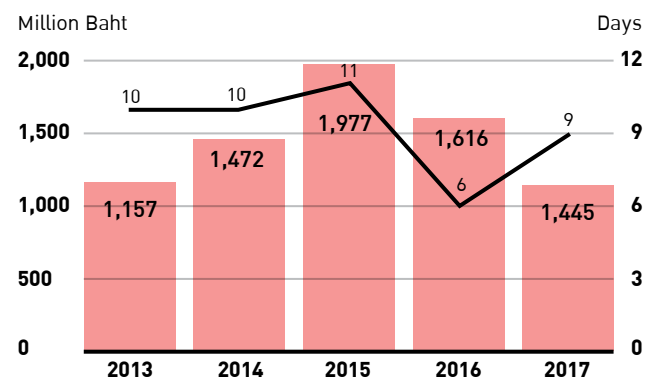
Challenge: The Management level development in harmony with the changing business direction is crucial and critical.

Implementation:

- Working in collaboration with Duke Corporate Education (Duke CE) to redesign and advance the programs for employee in management level, namely Service Performance Enhancement Program (SPE) targeting at business and functional leaders including senior managers or Manager of Manager in the fields of service and solution, sales and marketing, as well as New Product Development (NPD)
- Improving the Management Acceleration Program (MAP) emphasizing the direct learning and training experiences particularly in the countries that SCG venturing into.

Result: In 2017, SPE had been designed and ready to be implemented in 2018 according to plan. MAP had been operated with 40 attendees from the Managerial level employee.

Employee Learning and Developing Expenses and Days



Improvement of Classroom Training with Digital Learning System

Challenge: Classroom training is the least efficient learning style among the 70:20:10 Model for Learning and Development. Employee is to leave their post to attend the class considering also a non flexibility to some groups of employees. This platform doesn't support Learning Agility in organization.

Implementation: Revising several training programs in the classrooms by combining digital to boost training effectiveness and reduce time spent in the classroom by commencing the compulsory or basic courses that most employee

is required to learn such as Ready Together and Abridged Business Concept (ABC). In this regard, for the subject based information, employee will access training through digital learning platforms prior to group deliberation and analysis in the following workshops for highest potency.

Result: In 2017, ABC program was completely designed and ready for the launch in 2018 according to plan. Ready Together program had been operating with the 382 new employee joining the program in the form of digital training.



Level Up: Crossing over the Challenges

Challenge: The conduct of Competency Assessment and Individual Development Plan during the period of December to February each year is considered new activity to be publicized and communicated to SCG employee to realize the significance and aware of the duties and responsibilities resting upon them, as well as to learn and develop at all time for achieving the assigned work objectives as self intended and expected by the company.

Action: Organizing an event with the tag line "Level Up Crossing over the Challenge" to encourage the employee to complete the Competency Assessment and Individual Development Plan together with the learning and development

through the standardized 70:20:10 Model for Learning and Development in the Learning Management System (LMS) as well as creating the application using Augmented Reality (AR) technology to draw the employee's attention to download 3D procedures for learning and development.

Result: All employee who participated in the Assessment clearly understood the guidelines, procedures, and benefits from learning and developing through communication and various public relations events, such as lucky draw, advertising boards in every plants, emails, and messages from all levels of management.

> Expenses in learning and developing employees both internal and external

1,445
Million Baht

> Each of SCG employee at all levels completes approximately 9 learning and development days in the

70:20:10
Model for Learning and Development (including trainings) in 2017.



Energy and Climate Change

Challenge

Volatility of both energy prices and limitation of energy sources, a trend towards higher electricity prices, and risks from international policies on the target of emissions reduction to keep rising global temperatures to well below 2 degrees Celsius.

Management Approach

Diversification of energy sources, improvement of machinery and equipment to increase energy efficiency, increase the proportion of alternative and environment-friendly energy to reduce fossil fuel dependency. Develop products and services that help reduce greenhouse gas (GHG) emissions, and collaborate with key stakeholders in efforts to achieve targets according to the Paris Agreement.

Strategy 1

Mitigate impact of fossil fuel use

Implement mitigation measures starting from the stage of sourcing, storage, transport and use of fossil fuel, to mitigate risk and impact on the community and environment. To achieve air and water pollution emission levels that are better than the legal threshold and in conformity with international industry standards.

2

Increase energy efficiency

Improve or replace equipment to increase energy efficiency, explore ways to recover excess energy in the production process to reuse in order to reduce fuel use and cut GHG emissions.

Target

- Within 2020, reduce GHG emissions per production unit by 10% compared to 2007.



3

Increase the proportion of alternative energy usage

Research and develop the technology of alternative energy for industrial machines, increase the proportion of alternative energy in various forms including biomass, industrial waste, municipal solid waste, solar, biogas.

4

Generate products and services that reduce GHG emissions

Develop products and services that help reduce GHG emissions, from the stage of production, transportation to the use of the product, and support the carbon footprint certification of products.

5

Promote staff awareness on the energy conservation

Support and enhance knowledge and awareness among the workforce through a series of activities across the organization, to the extent to the individual, acting on it and sharing it with colleagues and family.

Actions in 2017

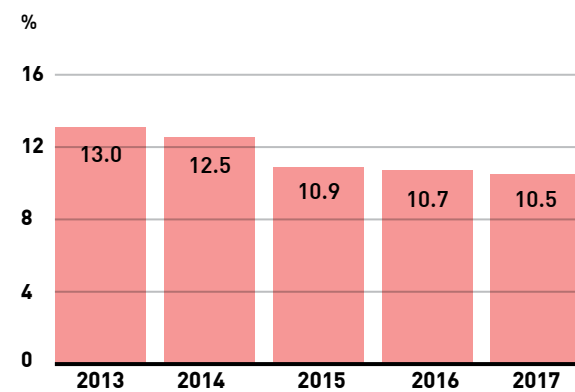
Reduction of Greenhouse Gas Emissions

Result:

- Regarding the energy use in 2017, SCG's total energy use is 183.5 petajoules. We were able to reduce energy use by 8.4% against BAU, with the proportion of alternative energy use at 10.5%.

- For GHG emissions, in 2017, SCG managed to reduce emissions by 1.92 million tons, equivalent to 7.5% reduction against BAU. The GHG emissions reduction progressed from 2016 about 0.11 million tons.

Alternative Energy



Note : Proportion of alternative energy usage has gradually been declining over the years due to intensely competitive markets in the sourcing of biomass. SCG therefore continues to explore other options, including waste to energy, and solar energy in its long-term planning.

Solar Energy Project

Rooftop Solar Energy

Background: RIL Industry Estate is one of many industrial estates in Rayong Province. Aiming to join the ranks of Eco Excellence & Eco World Class, it has embarked on using more alternative energy and making serious efforts to reduce GHG emissions.

Implementation: Data shows that Rayong Province has a high potential for the development of solar energy, and this can enhance the energy security and sustainability of the estate. RIL 1996 Co., Ltd. implemented the first pilot project to generate solar energy (Solar PV Rooftop) at its Administrative Office Building. The pilot and pioneering project has the maximum capacity to generate 140.76 kilowatts and able to distribute electricity for the building, which has the electricity demand averaging 150 kilowatts. TISI-certified equipment was used to connect the generation source with the power grid according to the standard set by the Provincial Electricity Agency.

Results: The result of an environmental impact study on the surrounding communities showed that there is no emission of air, water and noise pollution. The installation of PV panels at the angle of a 7 degree slant did not pose any light reflection that disturbed mobility along roads around the building. This project can contribute to the GHG emissions reduction of 198 tons per year.

Floating Solar Farms

Background: Electricity generation from solar cell panels installed on the ground, or a solar farm requires a large plot of land which is a constraint for a high capacity generation project. RIL 1996 Co., Ltd. therefore studied the feasibility of using alternative surface areas for solar panel installation, including the water surface of reservoirs owned by SCG Chemicals' subsidiaries to increase shares of renewable energy.

Innovation: RIL 1996 Co., Ltd. developed the floating system made from a high density polyethylene plastic (HDPE), for which SCG Chemicals is one of the largest producers in ASEAN, and implemented a solar farm pilot project featuring the installation of solar panels on the float using the water surface of the water reservoir of Thai Polyethylene Co., Ltd.. This system has the maximum capacity to generate 1 megawatt of electricity. The floating solar farm is fitted with an anchoring system to keep the angle of the solar farm constantly facing south for the maximum power generation. Floating solar farms contribute to value added to the company's products and substituting imports.

The floating solar farms can release the accumulated heat with the help of water, and thus the generation efficiency increases by 5-20% from the cooling effect compared with ground and rooftop solar installation depending on locations and weather conditions. Furthermore, the floating installation helps reduce the vaporization and reduce algae overgrowth.

Result: Reduction of GHG emissions by 810 tons per year

Other Solar Energy Projects

- Solar PV Rooftop Project of Thai Containers Group Co., Ltd. (Ratchaburi Factory) with a maximum capacity of 1 megawatt has been started operating since September 2017, able to reduce GHG emissions by 630 tons per year.
- Solar farm power generation of The Siam Cement (Kaeng Khoi) Co., Ltd. and The Siam Cement (Ta Luang) Co., Ltd. with a maximum capacity of 10 and 2.5 megawatts, respectively. These two projects will be operational in 2018.

Circular Economy

Waste to Energy in the Cement Production

Background: SCI Eco Services Co., Ltd. (SCleco) was established to manage waste inside and outside SCG, starting from industrial waste and subsequently expanding the scope to deal with excess from agriculture, and municipal solid waste. The waste was then processed into alternative fuel and alternative raw materials in the cement production process to replace the fossil fuel use. The major problem in municipal solid waste is the mixing of unseparated waste and variety of properties. In addition, certain portions of industrial waste in Thailand remained outside the regulated disposal system.

SCG's Strength:

- It has a network of cement plants located across the country. These plants in multiple locations have a capacity to receive waste generated locally without investing in a costly disposal facility. Additionally, cement plants incinerate waste at extremely high temperatures, resulting in lower amount of pollutions generated compared to normal waste disposal facilities.
- Cement plants can use low-grade fuels, so there is no need to invest in a processing technology that yields top-quality fuel.
- SCleco owns a patent for machinery that is able to automatically sort municipal solid waste, making it more efficient.

Information Disclosure on Climate Change

"SCG welcomes the voluntary recommendations of the industry-led Financial Stability Board (FSB), Task Force on Climate-related Financial Disclosures (TCFD). They are important steps in the right direction for participants to inform and improve transparency, reporting standards and awareness on the financial risks and opportunities related to the climate change. We believe that climate change will have significant impacts across many sectors and that we, as one of ASEAN business leaders, SCG have an important role to play in ensuring transparency around climate-related risks and opportunities."





Biogas from Wastewater Treatment System Substituting Fuel Oil and Coal

Background: The original wastewater treatment system at **Siam Kraft Industry Co., Ltd.** is an aerobic system, type Activated Sludge, which is a technology that requires an electricity to fill air into the system. With these features, the system is energy-intensive and generates a large volume of sludge from the process.

Implementation: **SCG Paper Energy Co., Ltd.** established the mandate to work on alternative energy and energy conservation for SCG Packaging, and invested in the improvement of **Siam Kraft Industry Co., Ltd.**'s wastewater system in 2016. The modification was conducted by adding an anaerobic treatment system to produce biogas, and improve the fuel use of **Thai Paper Co., Ltd.** and of **Siam Kraft Industry Co., Ltd.** to accommodate biogas use. This project started operation in November 2017 and it is

projected to achieve the reduction of greenhouse gas emissions by about 17,000 tons per year. This project is the first of its kind in Thailand that produces and utilizes the biogas in the lime kiln and power boiler simultaneously and it is expanded to other factories in both Thailand and regional countries.

Result: The anaerobic treatment system stabilizes the overall wastewater treatment system and reduced the electricity consumption for the system.

- Biogas can be used to substitute fuel oil at about 3.5 million liters per year, and about 3,000 tons of coal per year.
- Reduce aeration, resulting in less electricity use for the wastewater treatment system equivalent to 1.7 million units per year.
- Reduce an amount of chemicals consumption and less volume of sludge from the system.

Implementation: Support the government's effort to appropriately implement the waste management, helping to reduce the prevalent practice of waste burning, which is highly wasteful and polluting, and expand the service beyond SCG. **SCLeCO** will function as the center to receive various kinds of waste – industrial waste, biomass and municipal solid waste, from industrial factories and communities which usually comes unsorted. Municipal solid waste requires a separation process

before processing to Refuse Derived Fuel (RDF). Then the outputs are transported as a fuel to supply cement plants in multiple locations. Accordingly, SCG has consistently developed the machinery as well as the process to improve the waste quality and capacity, for example, the installation of alternative fuel feeder unit that is highly efficient at **The Siam Cement (Kaeng Khoi) Co., Ltd.** in 2017.

Result:

	Industrial waste		Municipal solid waste	
	2016	2017	2016	2017
Volume of waste substituting coal in cement production (ton per year)	44,226	59,765	30,520	46,955
Equivalent to coal reduction (gigajoule per year)	924,323	1,249,089	510,294	785,088
Equivalent to GHG emission reduction (ton per year)	88,735	119,912	48,988	75,368

Other GHG Emissions Reduction Projects

• **Rayong Olefins Co., Ltd. (ROC)** : Reduction of energy use by implementing the maintenance and enhancing the efficiency of machines during the turnaround, resulting in a reduction of energy use by 7.6 % compared to 2016 or equivalent to the GHG emissions reduction of 208,000 tons per year.

• **Siam Kraft Industry Co., Ltd. (Banpong Factory)** has changed its primary fuel use from coal to natural gas. The process involves using steam and electricity generated by natural gas to substitute electricity and steam generated from coal, by about 100,000 tons per year, which is equivalent to the reduction of GHG emissions at 71,500 tons per year.

• **Siam Kraft Industry Co., Ltd. (Wangsala Factory)** joint with Mitsubishi Corporation and Azbil Corporation in an investment of the optimization system for air compressor, replacing the existing system. The investment results in the reduction of energy required for an air compressor by 1.2 million units, equivalent to the reduction of GHG emissions of 1,100 tons per year.

• **Phoenix Pulp and Paper Public Co., Ltd. (PPPC)** installed a gasifier to receive biomass, including eucalyptus skin which is disposed during the pulp production to use in the incineration of lime mud. This innovation helped reduce fuel oil use by 3,700 kiloliters per year, equivalent to cutting GHG emissions of 15,000 ton per year. This project made PPPC to win the Energy Globe World Award 2017 in Iran for this project.



Water Management

Challenge

Water resources in each river basin of Thailand are limited. In the past, water resource management focused mainly on the acquisition of water sources to secure an adequate supply for activities. Yet with the population growth, the expansion of industry, urbanization and the changes in environmental conditions such as climate change, drought, flood, and water pollution

result in an conflict among different sectors, which may impact the reputation and business Interruption.

SCG has applied criteria for risk assessment of the water usage by considering the water withdrawal for production must not exceed 5% of the water source volume to prevent the risk of impact to the community.

Management Approach

The SCG Water Management Committee was established in 2014 consisting of representatives from all business units to collaborate in defining a clear direction and strategy for integrated water resources management. This include management of water balance and improvement of manufacturing processes, developing products that consume less water, increasing the

cycles of water usage, and applying a Water Footprint framework to assess the water efficiency. Additionally, we also participated in formulating policies and strategies for integrated water resources management with public and industry sectors.

Target

- Within 2020, reduce the water withdrawal per production unit by 20% compared with 2014.



Strategy 1

Reduce water-related risks

Manage water-related risks that may lead to production interruption and conflict with the community.

2

Reduce water usage by increasing the efficiency of production processes and products

Continuously improve the production process to increase efficiency reducing water withdrawal from natural sources with the expansion of sustainability practices throughout the entire supply chain.

3

Reuse treated wastewater

Install a high-efficiency water treatment system and advance water treatment process to reuse treated wastewater and add value to the production process instead of discharge.

4

Capability building of water management personnel

Raise the awareness and understanding of the importance of water resources, the social and environmental impact, through training and actual practice. To cultivate the thinking process, management, and business development skills.

Actions in 2017

Preparedness of the Eastern Economic Zone

Situation: SCG Chemicals has factories and manufacturing units located in Rayong province in the eastern region of Thailand, where demands for water are mainly for residential sectors, agriculture, industry and ecosystem rehabilitation. The three main reservoirs in Rayong are Dokkrai, Nongplalai and Klongyai. The piping system of these three reservoirs is connected to the Prasae Reservoir. Moreover, there is a project to connect this series of the piping network with reservoirs in Kaeng Hangmaew District, Chantaburi province. Once completed, this network will regulate water for both drought and floods in the future.

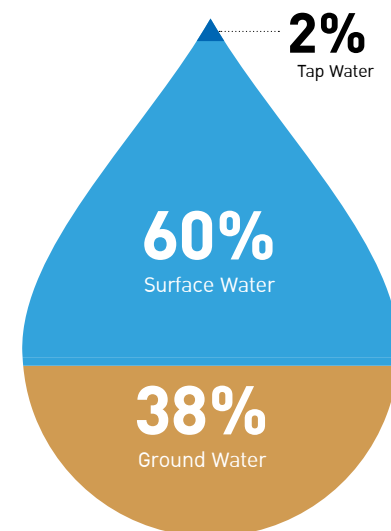
Risk Management Approach:

- Setting up a “Water War Room” in collaboration with stakeholders in the area including the Royal Irrigation Department, East Water Company, Industrial Estate Authority of Thailand and private sectors in the area. This serves as the data center for water resources management in the region.
- Assessing the risk of water scarcity using Global Water Tool™ (GWT) of World Business Council for Sustainable Development. The result is low risk rating, sufficient water available for all sectors and this will not lead to a business interruption.
- Participating in the water consumption assessment of all sectors, and forecasting the rising demand, in collaboration with the Eastern Economic Corridor (EEC) committee, to develop water sources sufficient for the increasing demand over the next 5-10 years.
- Assessing risk and impact quarterly and report the result to the top management of the organization.
- Participating in the water situation trend analysis with the private sector at the Smart Water Operation Center (SWOC), Royal Irrigation Department, to ensure disaster-risk preparedness.

Implementation: SCG Chemicals drew up a water situation scenario to forecast the water volume in the three main reservoirs. The findings show that the water is sufficient for the needs of the entire province of Rayong in 2017-2018.

SCG Chemicals also assessed a worst-case scenario where there is a water scarcity, insufficient for all stakeholders, and integrated with Business Continuity Management assessment (BCM), to come up with a Business Contingency Plan (BCP) as guidelines for crisis management, as well as a provision of reserve water resources to mitigate impact and damage.

Ratio of Usage
from External Water Sources



Water Institute for Sustainability

Collaboration: SCG participates in the integrated water resources management collaboration with the Federation of Thai Industries (FTI). In 2016, Mr. Somchai Wangwatanapanich, Senior Vice President, SCG Chemicals was elected as a vice president of FTI, with the task of managing the Industrial Environment Institute and Water Institute for Sustainability (WIS). WIS's mandate is to promote, support and improve the industrial environmental management, efficient water resource management, and ECO industrial town development, under the public-private sector and stakeholders' collaboration for sustainable development.

Implementation: In 2016-2017, SCG contributed human capital support – its top executives, management and operational staff – to join the drive of policy, management, planning, drawing up frameworks and operations for projects of WIS. Additionally, SCG provided financial support to activities of both institutes and continued support for the operation of WIS in 2018.

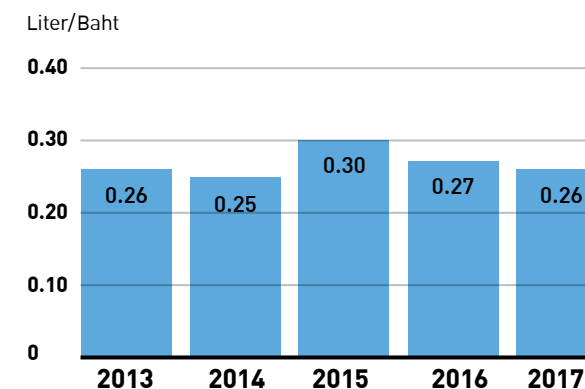
“SCG is one of a leader in resource and environmental management technologies, while also giving an importance to sharing experience, including an open house for site visits, providing peer-to-peer projects as a coach to other private sectors, or implementing projects with the community to create sustainability for the industrial sector.”



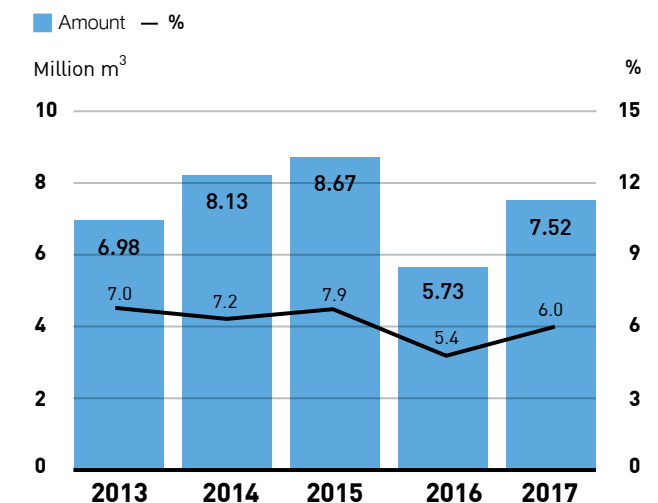
Ms. Panrat Phechpakdee

Senior Director, The Industrial Environment Institute
and Acting Director of Water Institute for Sustainability,
The Federation of Thai Industries

Water Withdrawal Intensity (Revenue from Sales)



Recycled Water



Reducing Water Withdrawal from External Source

Strategy: Increase the efficiency of production process, and reuse treated wastewater.

Implementation: SCG reduced water usage from external sources by 3.92 million cubic meters, or 3.2% compared with BAU of 2014.

SCG Chemicals

Projects in 2017	Measure	Water Savings in 2017
Thai Plastics and Chemicals Public Company Limited	Improve efficiency of water filter system	600,000 m³/year
Maptaphut Olefins Co., Ltd.	Improve efficiency of reverse osmosis system	90,000 m³/year
Siam Mitsui PTA Co., Ltd.	Install equipment to reuse the effluent from cooling tower	58,000 m³/year
Rayong Olefins Co., Ltd. and Maptaphut Olefins Co., Ltd.	Collect rainwater from the factory areas for use	760,000 m³

SCG Packaging

Projects in 2017	Measure	Water Savings in 2017
Siam Kraft Industry Co., Ltd. - Wangsala Factory	Improve efficiency of paper machine and water filter system	392,000 m³/year
	Reuse water from the production process, for pulp cleaning	29,400 m³/year
- Banpong Factory	Build a tank to store water from production process to reuse	529,000 m³/year
	Reuse cooling water in production process	96,000 m³/year
Phoenix Pulp and Paper Public Company Limited	Reuse treated water for cleaning of factory floors	109,500 m³/year

Water for Agriculture

Objective: To reduce the use of water from natural sources in the area, and build good relations with communities around the factory.

Implementation: Siam Kraft Industry Co., Ltd. and Thai Cane Paper Public Company Limited. implemented the distribution of treated wastewater to farmers for agricultural activities including growing rice, sugarcane, eucalyptus and other seasonal crops totaling about 4.6 million cubic meters.

Water-Efficient Flushing

Objective: one of the most household use of water is the sanitary ware and each one has a long lifespan. A development of efficient flushing system therefore plays a key role in optimizing water usage for household.

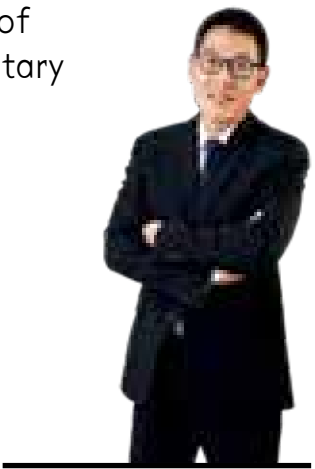
Innovation: Siam Sanitary Ware Industry Co., Ltd. the producer of COTTO sanitary ware conducted a research and development of a highly efficient flushing system to reduce water use since 1989.

This innovation is able to reduce water use by 30%, from a normal toilet ware that requires 9 liters of water per flushing. Then in 1993, it became the first manufacturer in Thailand to use the Dual Flush system that further reduces water use to 3/6 liter. Working on the R&D have been being continued and currently COTTO sanitary ware uses only 2.5/4 liters of water.

COTTO sanitary ware received Australia’s certification of Water Mark and Water Efficiency Labeling and Standard (WELS) Scheme. It is also the first company in Thailand to be certified with the Green Label, the latest version of 2013 from the Thai Environment Institute.

Result: The consumers of COTTO sanitary ware contributed to water savings of 60 million liters/year (calculated from the average water use per day according to LEED standard) compared with the average water use of sanitary wares, according to industry standard.

“The company devotes to environmental conservation, by making efforts to reduce the material use and mitigate impacts throughout the product’s lifecycle. That is why we are committed the development of water-saving sanitary ware to meet consumers’ needs, while maintaining the standards consistently.”



Buntoon Porapukham
Managing Director,
Siam Sanitary Ware Company Limited

Water Footprint

Strategy: Water Footprint assessment is one of the important tools to enable the analysis and assessment of water usage and the volume of degraded water, both directly and indirectly. SCG has applied Water Footprint assessment tools with various companies, and has been preparing personnel capability so that they can utilize these tools to benefit the business operation.

Implementation:

In 2017, SCG sent its employees on a study visit to the Water Resource Agency (WRA) in Taiwan to study the application of Water Footprint assessment tools. WRA is the policy advocacy unit for the public water resources management, by supporting industrial factories to conduct water footprint assessment, and using the data to manage water usage within the factory. The goal is to reduce water loss in production processes, and for the public sector to obtain water usage data in the industrial sector to plan and formulate water resource management for the national water demand. Moreover, there is the tax incentive policy for factories joining the water footprint assessment scheme in the form of waiving of conservation fees for participating factories which is a policy driver for national water management.

• SCG Chemicals collaborates with the Research Unit for Energy Economic & Ecological Management, Science and Technology Institute, Chiang Mai University, in the applying of water footprint assessment tools to conduct a pilot project with Rayong Olefins Co., Ltd. and Maptaphut Olefins Co., Ltd. to explore solutions to achieve water efficiency and reduce water footprint.

• SCG Packaging by Siam Kraft Industry Co., Ltd. has signed a Memorandum of Understanding with the Department of Ground Water Resources and FTI, as a pilot site for the water footprint assessment throughout the lifecycle project according to ISO 14046. This will enable the factory to identify water intensive spots, and then find the solutions to reduce water usage significantly, and realize the value of water resources. This pilot is ongoing until 2018.



Material Use and Waste Management

Challenge

Limited availability of natural resources is a key determinant driving all sectors to be aware of access and acquisition of raw materials, and the risk of their shortage in the future. As industrial development

continues to increase, the rising in parallel is the volume of waste and reject generated from their operations. Therefore, efficient and sustainable systems of waste management are imperative.

Strategy

Reduce waste generation at source

Through the application of TQM, TPM and Integrated Business Excellence (IBE) since the stage of planning, raw material and material sourcing with a quality standard to ensure the environmental friendliness, while also increasing production efficiency to prevent loss of raw materials with a view of the least waste generation.

2

Research and development of innovation to reuse raw materials, waste and add value to waste.

Invest in R&D to consistently advance the production processes so that they are capable of utilizing recycle materials and waste as substitute materials, substitute fuel or processed into value-added products.

Target



- Since 2012, zero waste from production processes to landfill.
- Within 2020, reduce the volume of waste disposal per production unit by 20% compared with 2014.
- Recycle waste for the maximization of its value consistently.

Management Approach

SCG applies the principle of 3Rs – Reduction, Reuse/Recycle and Replenish throughout the supply chain with the return to the production process in the form of substitute material, substitute fuel, and value-added product, known as “Circular Economy”. This can be implemented

through the management, production planning, improvement of machines and work processes, using technology and innovation, to achieve the appropriate use of resources and to mitigate the environmental impacts from the volume of waste and the waste management.

3

Industrial waste management without sending to landfill

Survey and collect the data of waste from all companies, in order to classify and assess the volume of waste. The data is transferred to responsible departments for appropriate waste disposal according to legal and technical requirements, which achieve the target of zero landfill.

4

Reduce waste disposal to incineration without any recovery

Develop process and management in factories, which previously transfer waste to be disposed by incineration without any recovery, to utilize waste as a substitute fuel.

Actions in 2017

Produce Insulation Glass Wool from Its Waste

Strategy: Research and development for returning waste of insulation glass wool and reject from the production process, such as dry waste and wet waste, into raw material. Therefore, this reduces waste to dispose without any recovery

Implementation: Siam Fiberglass Co., Ltd. in SCG Cement-Building Materials is the producer of insulation glass wool using 100% glass scraps. It has been making an effort to convert its waste into substitute raw materials.

- In 2014, the company invested in a Dry Waste Conversion system to process insulator waste including wet waste from the production process (Reclaim Wool), dry waste from edge trimming, reject and reclaim waste from the customer by shredding in to the smaller size so that they can be fed into the furnace. Thus, dry waste substitute glass for 98% while wet waste substitute glass for 60%, respectively.
- In 2017, the company additionally invested in the Wet Waste Conversion system to remove moisture and binder agents from wet waste leading to increasing unitization of insulator waste. Consequently, this can substitute raw materials use at around 125 tons per year.

Result:

- About 95% of wet and dry insulator waste were reentered into the production process, while the remaining 5% was the waste from pipe cleaning which is currently under the studying process to achieve 100% waste management.
- Dry Waste Conversion and Wet Waste Conversion Systems reduce the cost of waste disposal about 3 million baht per year. An investment return is projected within 2 years.

Turning Wastewater from the Production Process to Fuel

Strategy: Thai Polyethylene Co., Ltd. aims to reduce the volume of waste disposed outside SCG, and improve its quality to be recycled as an alternative fuel. The company generates up to 4,200 tons per year of wastewater from the catalyst production unit. In general, wastewater undergoes the neutralization and sedimentation using lime, before the disposal without any recovery.

***SCG is capable of recycling waste at more than 99% without sending nonhazardous waste to landfill. However, in 2017, SCG sent ceramic wools and contaminated containers as hazardous waste to landfill at 0.23% due to the fact that they are unable to be reprocessed or reused.

Implementation: From a collaborative study with SCI Eco Services Co., Ltd. Wastewater from the catalyst production unit has the heating value. Therefore, it can be blended with other types of fuel to be a composite fuel with the sufficient heating value required by cement kiln. This reduces the amount of waste disposal without any recovery.

Result: Ratio of the volume of wastewater disposal without any recovery to the volume of total wastewater generated from the catalyst production unit is 81% in 2014. This figure was reduced drastically to 24% in 2017 representing the reduction of wastewater disposal by more than 3,000 tons per year.

Produce Pulp with Energy and Chemicals from Waste

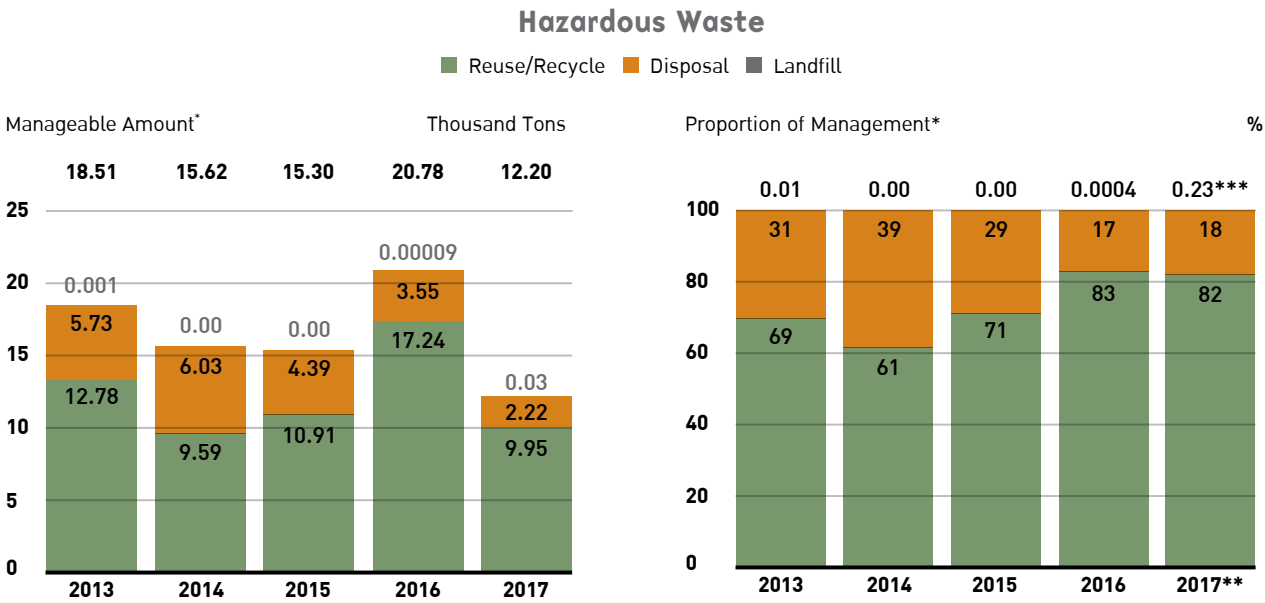
Background: In 2014, Phoenix Pulp & Paper Public Company Limited expanded pulp production capacity from 240,000 to 300,000 tons per year, resulting in the increased volume of lime mud waste from the production process. The company thus invested in the installation of a lime kiln to obtain

calcium dioxide returned to be used for pulp digestion chemicals. In addition, there are two other types of waste: firstly non-conforming pulp, increased up by about 2,000 tons per year, and unburnt lime from a total of 3 units of lime kiln which account for 36,000 tons per year. This brought the disposal expense up to 25.5 million baht per year.

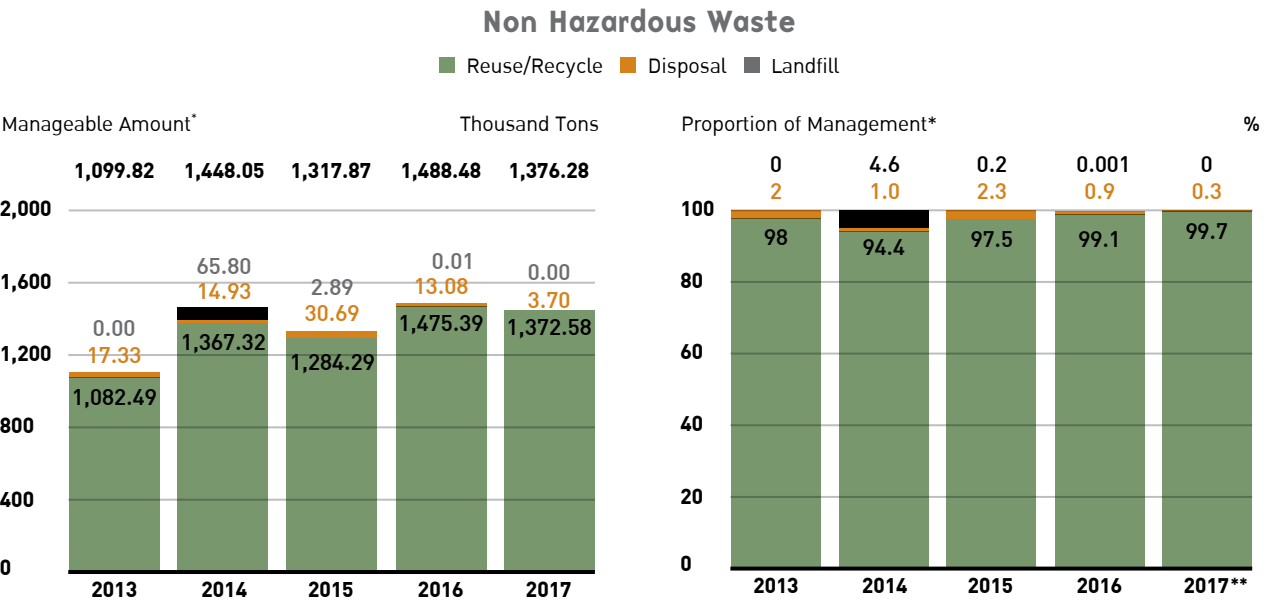
Implementation: The company has studied the property of each type of waste, and explored the solutions to maximize its value.

- Non-conforming pulp are natural fibers from Eucalyptus tree, fed into the Biomass Gasifier to produce Syngas which is used as fuel for the Lime Kiln, substituting fuel oil at the amount of 98,000 liters per year.
- Unburnt lime is reentered for mixing with Burnt Lime to produce the chemical substance used in pulp digestion, thereby this reduces the use of Quick Lime from natural mining by about 6,400 tons per year.

Result: The overall waste management can reduce waste disposal costs and purchase of raw material and fuel up to 42.1 million baht per year while reducing GHG emission by 2,500 tons per year.



* Waste in the storage waiting for waste management is excluded.
** Within KPMG's limited assurance scope (page 78)



* Waste in the storage waiting for waste management is excluded.
** Within KPMG's limited assurance scope (page 79)

Produce Pulp Digesting Chemical from Waste of Petrochemical Factory

Background: The olefins production process of **Rayong Olefins Co., Ltd.** generated spent caustic, which requires a large amount of energy usage and high expense in wastewater treatment.

Innovation: **SCG Chemicals'** research team explored and experimented the technology that is worth in investment and waste management. Eventually, the team achieved a technology that is able to extract the mixed salt from spent caustic which can be used as a pulp digesting chemical. This innovative technology has already been patented. The research team conducted a design and developed the whole process on its own, involving lots of investment and time, building a pilot unit for experiments and coordinating with **SCG Packaging** for the trial use. After this is an up-scaling of a production process with the step of products

development, process, check, correction and improvement until the project success, including the study and implementation of logistics from upstream to downstream. The capital investment of this was 140 million baht.

Result: This project turned waste from petrochemical factory to pulp digestion chemical. The process capable of receiving 18,000 tons of spent caustic per year, to produce 6,000 tons of pulp digesting chemical with less amount of wastewater at 12,000 tons per year returning to the treatment system. Furthermore, the water used for the wastewater quality improvement prior the treatment was reduced by 100,000 cubic meters per year, while reducing the amount of energy and chemicals in the pretreatment of spent caustic and wastewater treatment.

SCG Chemicals has a plan to scale up this technology to other factories with a similar type of waste in the future.

“ This project implemented with the collaboration between two companies: SCG Chemicals and SCG Packaging, and its success came the support from the leader of both companies. This kind of project has been studied in some countries for a long time ago, but no one company success, due to high investments and lack of cross-business collaboration.

This project originated from the idea that reducing wastewater treatment load that requires a large amount of energy and reducing the discharge water containing high salt content from SCG Chemicals, converting it into pulp digesting chemical, a key material for the paper production plant of SCG Packaging.



Dr. Suracha Udomsak
Research and Development Director,
SCG Chemicals Co., Ltd.



From Waste to Product

Strategy: Research and development in order to turn waste into the products, reducing energy and natural resource use, generating the value from waste.

Implementation: Some of the waste-to-product highlights in 2017 are:

- Eco Concrete: produced by **CPAC (The Concrete Products and Aggregate Co., Ltd.)** and is a concrete with a mixture of pulverized fuel ash in the ratio of 10-50% of concrete. The quality is not different from the pure cement concrete according to the concrete design standard.
- COTTO Sanitary Ware and Ceramics : produced by **Siam Sanitary Ware Industry Co., Ltd.** using ceramic waste from rejects. They are crushed

and recycled as a substitute raw material in production. The proportion is about 5% of overall raw material volume, and this can reduce the volume of ceramic waste that required to be disposed by 24% of total ceramic waste.

- Fertilizer: **Thai Paper Co., Ltd.** collected the lime mud which is the by-product of pulp production process and sells as a raw material for the fertilizer factory nearby. Lime mud has a property of alkaline which can neutralize acidic soil condition. This can reduce the expense of lime mud disposal to incineration at about 17 million baht per year, representing about 20,000 ton of lime mud and equal to 50% of overall lime mud volume. This also supports farmers to obtain cheaper soil treatment materials.

Reduce the expense of lime mud disposal to incineration

17,000,000
baht per year

Sustainable Products and Services

Challenge

Dramatic changes in the development of technologies prominently affect people's lifestyles, resulting in behavioral shifts as consumers demand new products and services that are creatively response to their lifestyle. They seek more comfortable and better quality of life. Moreover, they are more conscious about health, wellness, and the environment.

Management Approach

Focus on the development of products and services that meet the needs of specific consumer groups, harnessing innovation and information technology as tools to develop products and services to deliver maximum benefits to the customers, while also expand sales and distribution channels to deliver goods and services, in the country and in ASEAN.

Strategy 1

Develop products and services that meet the consumer's needs

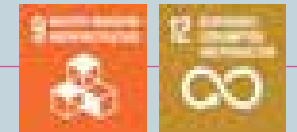
Analyze and assess the market's demands, as well as the emerging social trend towards an aging society, prioritizing home improvement and well-being to respond the diverse needs of consumers, and focus on the integrated development as solutions rather than stand-alone product selling.

2

Innovate sustainable products and services

Research and develop products and services whose quality is improved upon their predecessor, with technologies and innovations that add high value and are friendly to health and environment, which are commercially viable, and add more variety products in response to the customer's lifestyle.

Target



- Increase the sales of SCG eco value products and services to one-third of total revenue from sales.
- Increase the sales of High-Value Added (HVA) products and services to 50% of total revenue from sales.
- Within 2018, all Business Units must conduct the product and service liability assessment cover all companies.

3

Develop the standard for environmentally friendly products and services

Develop environmentally friendly labeling of products and services as self-certification types, and seek certification from other credible agencies. SCG also provides an advisory service for "Green Building" construction projects according to international standards, for example, LEED and TREES.

4

Raise the safety standards of products and services

Consistently conduct the products and services liability audit, and promote all companies to conduct their internal audit, to ensure the delivery of safe products and services to customers.

65 companies

100%

The number of companies installed the product liability management system and have been audited.

Actions in 2017

Good Air for Good Health

Background: Houses in urban usually lack a good ventilation. As houses stay shut for most of the day, heat and humidity accumulated, with the vapor of VOCs from household care, for example cleaning liquids, air refresher sprays, insecticide and etc. The house could become a collection source for pollutants and induce health risks including “Sick Building Syndrome”. This causes the symptoms such as dizziness, irritated eyes, and nose, which increase the risk of respiratory disease and allergies to residents for both children and adults.

Innovation: SCG Cement-Building Materials has been developing the **Active AIRflow™ System** which helps ventilate the heat and stuffiness inside a house towards the roof. The **Well AIR** system uses Smart Logic Control by measuring the level of CO₂, VOCs and relative humidity (RH) inside a room, and then automatically command the ventilation system, providing a good air quality to dwellers.

Pollution and Quality of Life



>5
5 times the level of pollution inside a house is higher than outside



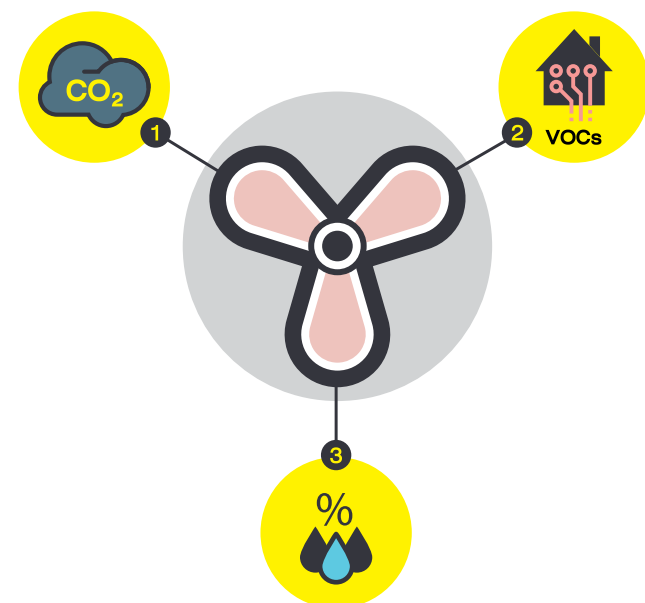
4th
4th air pollution is one of the major life-threatening risk factors in the world



38%
38% of Thai children have allergies



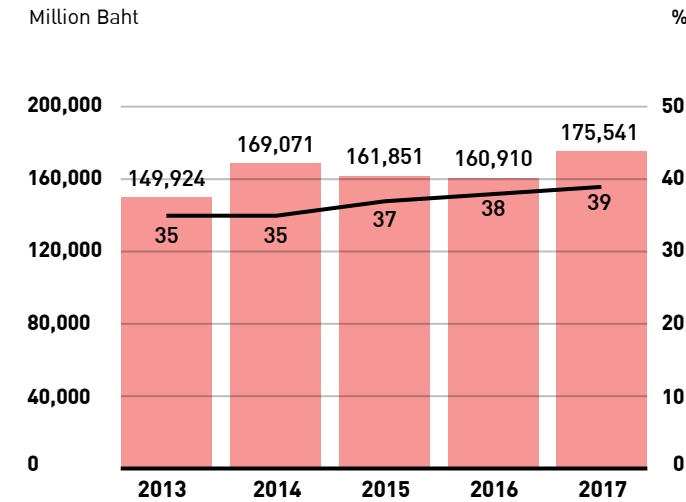
20%
20% of Thai adults have allergies



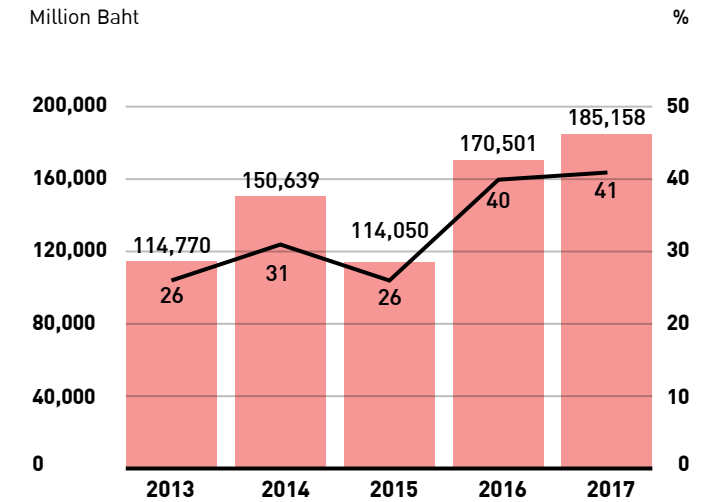
Maximum value of ambient air that Well AIR starts to work

- 1 CO₂ >1,000 ppm**
higher level than this will start to affect human health according to ASHRAE
- 2 VOCs >400 ppb**
VOCs should not be over 500 microgram/m³, according to WELL
- 3 RH >75%**
Comfortable relative humidity for the tropical zone is 45-75%

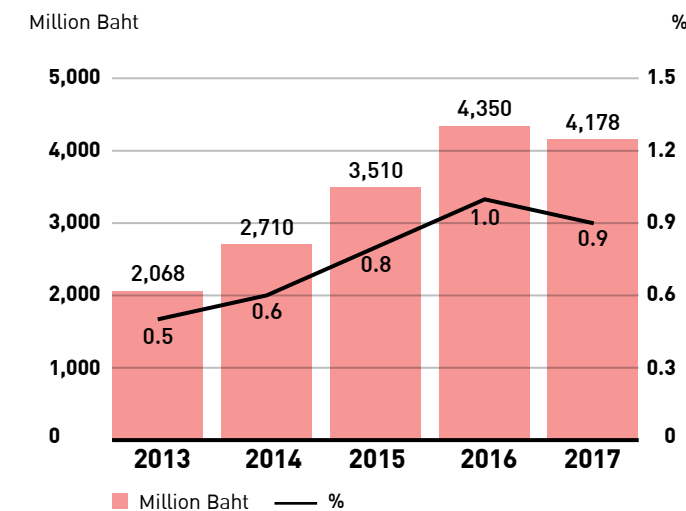
Revenue from Sales of High Value Added Products and Services (HVA)



Revenue from Sales of SCG eco value Products and Services



R&D and Innovation Investment



Sustainable Packaging

Background: Environmental impacts from resources overused and from the safe and hygienic standard of food packaging.

Innovation: Develop paper and packaging which is obtained less resources with recyclable feature. In addition to the innovation, packaging for consumers is also developed which ensures consumers' safety and its convenience usage.

- **Fest: SCG Packaging** has produced Fest, Food Safe Packaging, from food contact paper. This product is able to be used for hot and cold foods. It can be printed for a decoration creating the difference and adding the value to the food. Furthermore, Fest also provides product manufactured from the natural fiber which is clean, free of chemicals, strong, durable and more convenient. At the present, Fest has more than 39 products distributed via retailers and supermarkets with a provision of the convenient way to customers using the online purchase. In 2017, SCG Packaging invested for a plant expansion to serve the increasing consumption.

- **Merchandising Display: SCG Packaging** has developed new application of corrugated containers that can be used to merchandising display, market communication materials, for example, counter or shelf for product display, product labels that made from 64-100% recycled paper. The merchandising display materials are lightweight, high strength, and ease of



mobility. SCG also offers integrated solutions from design, installation, and collection for recycling without disassembling.

- **CS SuperFlute:** SCG Packaging has developed CS SuperFlute, the corrugating medium that has high strength in a lower grammage. This innovation reduces the pulp use by 8% compared to the paper with the same quality. It has manufactured 110 gram paper that has the comparable quality to 125 gram, available for sale since 2011. In 2017, the production line expanded to produce 125 gram-equivalent of 150 gram. CS SuperFlute reduces material use in production which decreases the overall weight of packaging, as well as saving logistics cost.

Operating Microscope Drapes

Background: Hospitals have to import Operating Microscope Drapes with each brand required a specific drape. As a sterilization requirement, it must be disposed after a single use.



Innovation: SCG Chemicals collaborates with the Faculty of Medicine from three universities – KhonKaen University, Chiang Mai University and Prince of Songkla University on “The One” Project to innovate medical-grade plastic pellet for the manufacturing of Operating Microscope Drapes that is translucent, thin, non-electrostatic capable of being sterilized by Gamma radiation, and compatible with all brands of operating microscope to substitute their imports.

Target: It is projected that in 2018, the project will be able to produce 2,000 drapes, which is 30% of the one-year supply for all three medical institutions.

SCG Green Building Solution

Business Opportunity: At present, organizations are increasingly interested in developing energy efficient and environmentally friendly buildings. In addition, the government has the policy to support newly constructed facilities to be green buildings, and thus the trend for green buildings has been growing steadily.

Implementation: SCG Cement-Building Materials set up SCG Green Building Solution as a business unit to provide advisory services to the development of green buildings according to international standards since 2012. Its business and clientele have expanded in

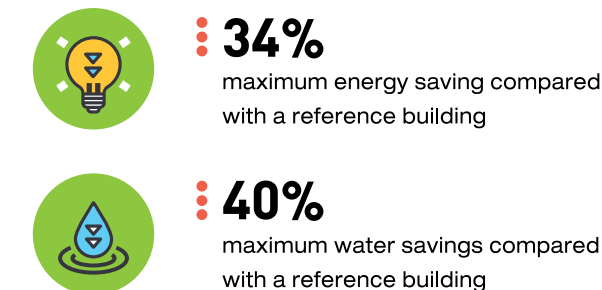
response to the market trend which offers integrated solutions from product advisory services to the application for the certification of LEEDS and TREES. SCG also has Thailand’s first energy conservation expert who is certified by ASHRAE for Building Energy Modeling Professional and High-Performance Building Design Professional

Result: In 2017, SCG has more than 70 projects and certified at the level of platinum and gold at over 17%, representing 1,400 million baht and targeting 20% growth in 2018.

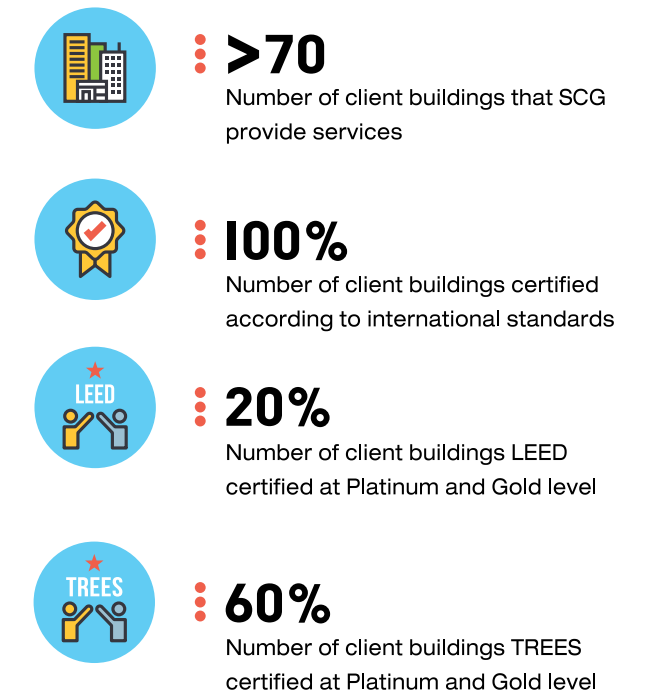


The achievement SCG GREEN BUILDING SOLUTION (2012-2017)

Efficiency of Client Buildings



International Standards Certification



LEED Standard : Leadership in Energy & Environmental Design is a system that evaluates the environmental friendliness of a building or construction that is most widely accepted and prevalent worldwide. It was established in 1993 and developed by the U.S. Green Building Council (USGBC), USA.

TREES Standard : Thai’s Rating of Energy and Environmental Sustainability is a system that evaluates energy and environmental sustainability developed by the Thai Green Building Institute. It was established in 2012 as a collaboration between the Engineering Institute of Thailand under His Majesty the King’s Patronage, and the Association of Siamese Architects under Royal Patronage.

Certified Environmentally Friendly Products and Services





Customer Experience

Challenge

Customer needs are varied and diverse, and must be responded fully and properly. Online social media has become the customers' most favorite platform to communicate and share feedback on

products and services. Digital technology is inseparable from business, influencing logistics, online marketing and sales. In the long term, these will pose risks to the traditional business models and distribution channels of SCG.

Strategy 1

Engage with B-2-B group for B-2-C Group

Foster cooperation and trust with B-2-B group in developing new products and services responsive to the consumer's needs. Share and exchange knowledge in two-way communications through seminars and workshops.

2

Engage with the Consumer Group

Create direct experiences with products and services that are linked and connected across all channels online, shop fronts, or point of sales to bring about maximum satisfaction for the customer. Focus on giving honest and accurate information to the proper target segments. Open to feedback from the customer to improve and enhance products and services.

Target



- SCG is the first brand that consumers think of whenever they want products and services in the same group that SCG is operating.
- Increase revenue from products and services sales on the basis of a strong relationship between the brand and customers.

Management Approach

Be a truly customer-centric organization, by engaging closely and consistently to analyze diverse needs of the customer, and consequently advancing our own capacity to meet those needs. We work with two categories of clients: Business-to-Business, and Business-to-Consumers. SCG has

developed a marketing approach of B2B2C – SCG Marketing Way: Building Trusted Innovation. That is, we build the trust of all sectors on our products and services that focus on fostering innovation for quality of life and sustainable development.

Actions in 2017

SCG Roof Experience

Thailand Roof Destination 2017

Background: Roof tiles and roofing systems are a top-ranking product group for SCG, featuring a variety of materials, design, color and price range. In the market, shops and agents face the constraint of being unable to display all product samples. There was not yet a customer service center that could deliver total solutions to customers. As a result, customers were unable to access, or recognize the value and benefits of all SCG products and services.

Implementation:

• **SCG Cement-Building Materials** organized a Thailand Roof Destination 2017 project on the 3rd floor of the SCG Experience Building to display product samples in a full range of over 100 varieties that differ in materials, model, design, and pricing range. Customers are also able to compare property that is different from one model to another. In addition,

they can receive advisory services on design, beauty, roof construction with different types of load resisting materials, use of insulation, ventilation, tiling, canopy, gutter and provisional estimate of construction cost. SCG also provides new roofing installation services to customers.

• Mobility Roof Assistant is the application built by SCG to serve as a tool to assist sales staff at branches or for agents to be able to access very quickly all data relating to roofs. Quick product searches as driven by the customer’s interests, be it on the basis of material, design, color, or price. Video presentation via Apps will enable customers to see more clearly how products are used, installation steps, ventilation or testing of products.

Result: The survey of customers nationwide visiting and receiving service at Thailand Roof Destination 2017 showed that over 80% out of a total of 22,183 survey respondents said they are happy with this service.

Chatbot

Challenge: Answering questions and queries via SCG’s official LINE account with heavy user traffic. The majority of those asking questions want accurate answers quickly. And there are plenty of questions relating to products and services, on the issues of types, property, and locations of shops or agents. Giving accurate answers fast is a major challenge.

Innovation: SCG has developed the artificial intelligence technology for automated answers, Chatbot. We used FAQs from SCG Contact Center to construct a database to provide answers accurately. Customers can type the query about the product details, shops, etc. and the system can pinpoint the location and use other APPs to direct customers to the exact location. It can also provide service seamlessly by conducting referrals to service agents to take care of customers insights or making an



appointment to see the product. Chatbot is available 24/7 and therefore most efficient in responding to consumers’ needs.

Result: From the Chatbot service launch in August 2017 till end of December 2017, we recorded over 17,000 uses, averaging at least 3,000 per month.



Customer’s Voice

SCG operates a system called Voice of Customer Management, collecting feedback and complaints through online platforms and all points

of sales, for analysis to identify causes and resolve issues for the customers. We also use these feedbacks as inputs in improving products and services.

voc Edge of drainage lid is sharp, cutting into finger

Response

Staff went to customer’s house to scrub the edge of drainage cover. The whole lot in stock was recalled for edge smoothing. The mold was also readjusted, to fold the edge.

voc Incomplete delivery of concrete. Concrete quality not according to advertisement

Response

Staff representative apologized and explained. The cause was identified as the miscalculation of volume by customer’s engineer. The quality problem had to do with the concrete mixing process and the incorrect pouring of concrete.

VOC - Voice of Customer

Pre-Professional & Academic Community

Strategy: Foster engagement and relationship with academia and students in the field of architecture, who will one day be the architects and decision makers on building materials with SCG.

Implementation: SCG Product Experience with the Faculty of Architecture project aims to deliver the experience of using SCG products. We cooperate with the Architecture Faculty of universities in organizing knowledge sessions to students on selection of materials for modelling of building design, building materials in real life situations, and we support students' projects with materials. These actions are intended to build good relations between SCG and experts, and to create brand recognition of SCG.

Result: In 2017, we supported five projects of the Architecture Faculty in four universities: Chulalongkorn University, Bangkok University, Silpakorn University and Chiang Mai University. These projects deal with different types of construction including monastic shelters for monks, dormitory toilets, a school building, school library, and home for people with disabilities in the provinces. SCG supports building material include cement, roof tile, floor sheets/cement fiber walling, sanitary ware, water treatment tanks. These projects were publicized via social media platforms such as Facebook, which attract lots of viewership.



SCG Marketing Way

SCG Marketing Way, launched in 2014, consists of three main concepts – Innovation, Better Living and Sustainable Development, compatible with the Principles of Sufficiency Economy in aspects of operations.

- Moderation, this is marketing in moderation, not oriented towards maximum profit, but responsible to the economic, social and environmental well-being, for the sake of sustainable balance, optimization of management and resource usage.

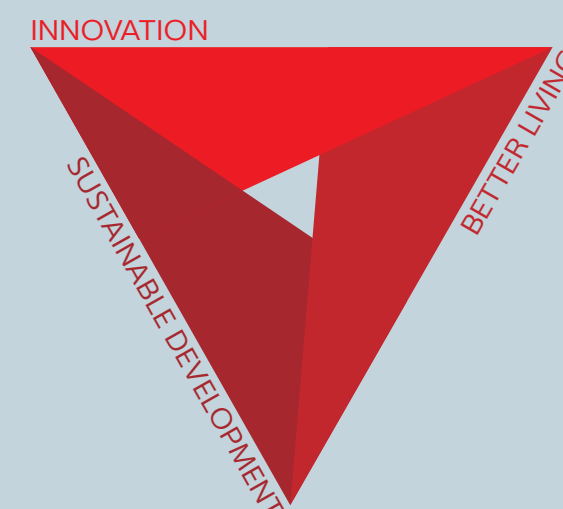
- Reasonableness and Prudence by developing innovation of new products and services or improving from existing ones to respond to customer needs and sustainably raise quality of living.

SCG Marketing Way does not seek to measure results on the basis of profit or maximum customer satisfaction. Rather the aim is to foster trust and confidence among stakeholders of product and service innovation under the SCG brand – Building Trusted Innovation with the following four strategies:

- Know the Truth: specialize, study, research and manage all knowledge
- Do the Right: do the right thing, develop the right product and service
- Say the Fact: talk straight facts, do not overstate and target the right segments
- Share for the Better: exchange and share knowledge.

SCG Marketing Way has been evolving for quite a number of years, and in 2017 SCG won a nationally outstanding award Organization with Marketing Excellence Award a trophy from HRH Princess Maha Chakri Sirindhorn, organized by the Thailand Management Association (TMA), and a regional award that is the National Winner, Marketing Company of the Year Award 2016 at the 2016 Asia Marketing Conference organized by Asia Marketing Federation (AMF).

With success in-country, SCG is expanding SCG Marketing Way to other countries in the region where SCG operates.





Sustainable Value towards Supplier

Challenge

Suppliers play an important part in sustainability throughout SCG's supply chain, which consists of manufacturers, contractors and traders. SCG may be exposed to

operational and reputational risks that may result in business disruption. Critical issues include ethics, legal compliance, environmental friendliness, accident and safety concerns.

Management Approach

Select suppliers with the capacity to conduct business ethically with professionalism in the delivery of quality products and services, in order to reduce business risks while

increasing co-opportunity under SCG's effective tracking and assessment systems so we all grow our business sustainably together.

Target



- 80% of Procurement Spend come from Suppliers who commit to comply with SCG Supplier Code of Conduct by 2020
- 100% of Focused Suppliers participating in the Supplier Development Program for Sustainability by 2020

Strategy **1**

Select and assess suppliers with the capability for sustainable business

Select suppliers on the basis of commitment to comply with SCG Supplier Code of Conduct, and capacity for sustainable business. Conduct for assessment and certification of suppliers annually and continuously in order to mitigate risk in the supply chain.

2

Assess risks and classify suppliers into groups

Conduct spend analysis and business risk assessment, taking into account Environmental, Social and Governance (ESG) factors. Prioritize risks that may affect SCG business. The results are then used to classify suppliers and frame a strategy and supplier development plan corresponding with the risk.

3

Develop supplier's capability towards sustainability

Organize and plan a development program aligned with the risk, while seeking to strengthen the supplier's competitiveness to facilitate their grow alongside SCG.

4

Raise awareness, knowledge and people's competency

Establish a Procurement Sub Academy Steering Committee to enhance the knowledge and competency of employees. Share knowledge, information, operational guidelines with procurement entities in both public and private sectors with an emphasis on procurement and sustainability. This is to ensure that our people work effectively in line with targets.

Actions in 2017

Supplier Risk Assessment and Segmentation

Background: SCG conducts assessment of supply chain risk management on an annual basis, by applying an enterprise risk management framework and spend analysis. Until recently SCG classified suppliers into two groups, namely general supplier and critical supplier. Then we consider adding more factors at a detailed level and certain issues to enhance optimization of supplier development planning as aligned with the risk.

Implementation: Streamline supplier segmentation process to align with risk and significance by applying an enterprise risk management framework and spend analysis with increase clarity in considering factors impact to business to classify Critical Supplier and incorporating details on Environmental, Social and Governance (ESG) risk factors to identify High Potential Sustainability Risk Supplier. To ensure effectiveness of supplier management, SCG conducts various approaches such as Diversified Source of Supply, Supplier Assessment, Corrective Action by providing supplier advice to improve their work processes to in line with Green Industry standards (Go Green Together) as well as Supplier Development for Sustainability Program with Focused Suppliers or potential suppliers who have capacity and commit to work and grow sustainably with SCG. We now classify suppliers into four groups as follows:

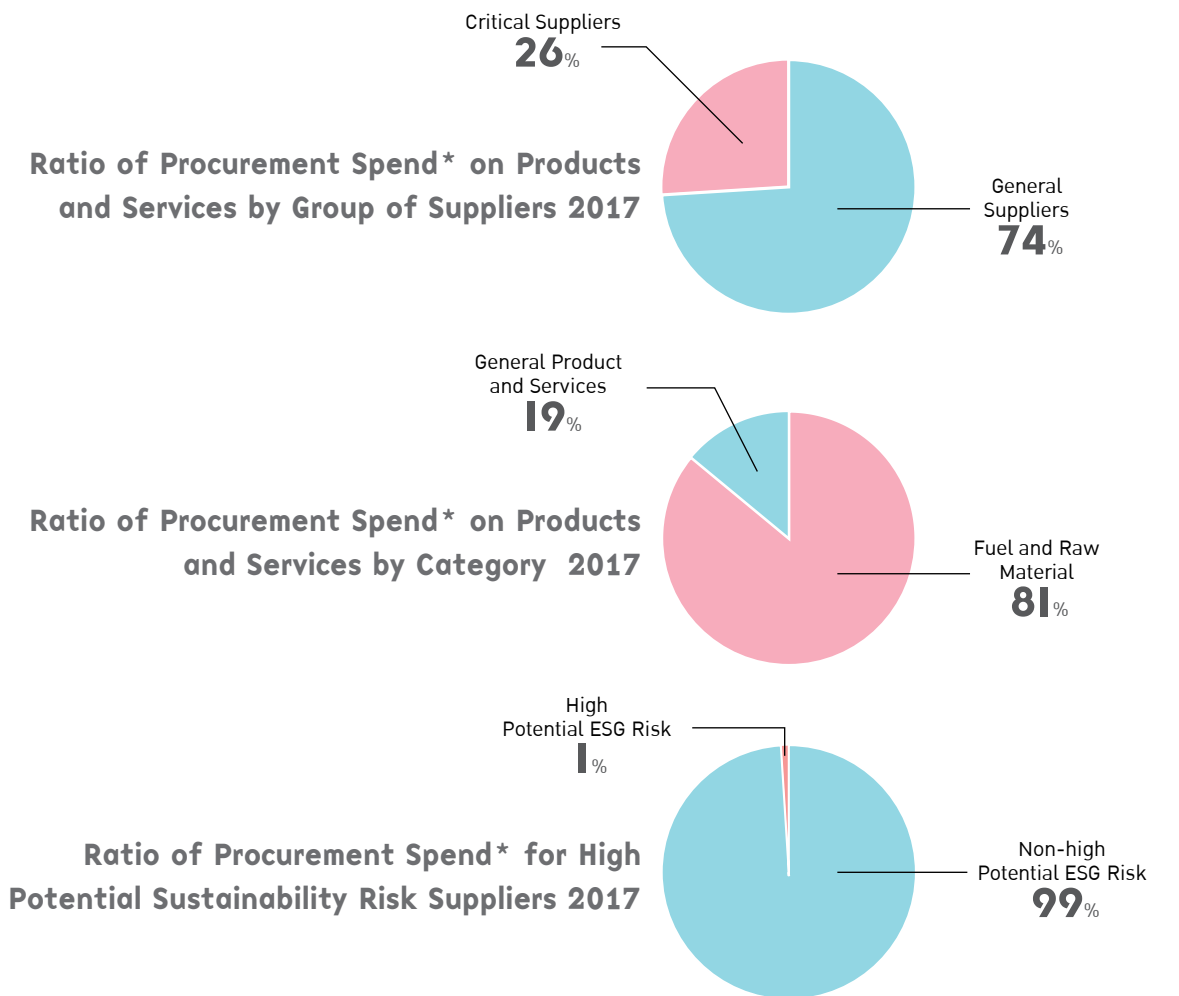
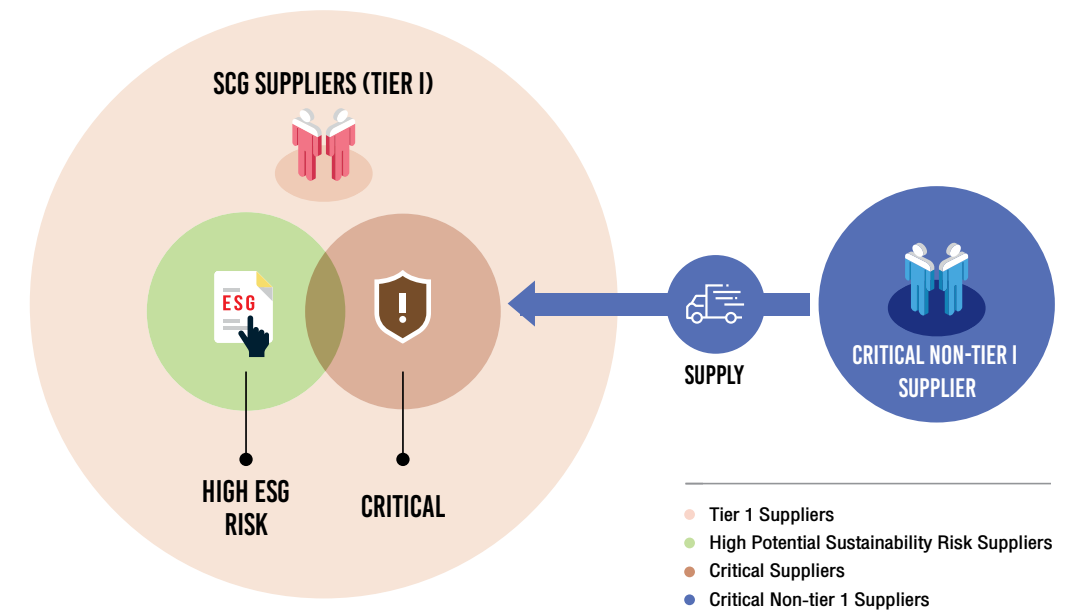
- General Tier 1 Supplier: Suppliers who manufacture and distribute products and services for SCG directly.
- Critical Supplier: Suppliers, and Distributors of products and services that are significant to SCG's business operations, such as high purchasing volume, critical components of the product, non-substitutable products.



- High Potential Sustainability (ESG) Risk Supplier: High potential suppliers and distributors that may have a negative impact on their operations, social, environmental, and regulatory.
- Critical Non-tier 1 Supplier : Suppliers who do not directly produce and distribute goods and services to SCG. However, dealing with products and services that are important to critical suppliers of SCG.

Result: In 2017, SCG conducts ESG risk assessment for suppliers cover 98% of procurement spend.

Supplier Segmentation 4 Groups



*Exclude oversea operations

Supplier Governance and Assessment

Result:

8,502 Suppliers

Total Tier-1 Suppliers *

5,902 Suppliers

Suppliers* committed to SCG Supplier Code of Conduct

> Conduct business with ethics, transparency, labor caring practices, human rights, compliance with laws and responsibility to society and the environment

520 Contractors

Total Operation Contractors

[*Number of active suppliers who conducted business with SCG in 2017]

463 Contractors

Operation contractors certified under SCG Contractor Safety Certification System

> Comply with occupational health and safety laws, and mitigate risk related to accidents, etc. Under co-developing with uncertified contractors to improve their performance to align with the certification system.






343 Carriers

Total Transportation Contractors

120 Carriers

Transportation contractors certified Fleet Carriers Standards

> Pass various SCG management standard assessments, including matters of driver, safety, vehicle, journey, organization and customer services.

Governance and Assessment		2013	2014	2015	2016	2017
	Suppliers committed to SCG Supplier Code of Conduct (coverage of procurement spend)	Launch SCG Supplier Code of Conduct	 <ul style="list-style-type: none">• New suppliers commit to SCG Supplier Code of Conduct• Main suppliers commit to SCG Supplier Code of Conduct			48% of procurement spend
	Supplier ESG Risk Assessment (coverage of procurement spend)	 Assess and classify supplier		55% of procurement spend	89% of procurement spend	98% of procurement spend
	Operation contractors certified under SCG Contractor Safety Certification System	100%	100%	100%	100%	89%
	Fleet carrier certified under Fleet Carriers Standard				100%	100%
Development	SCG People Competency (LMS: Learning Management System)	Enhance awareness and knowledge by internal training and activities		Develop learning module		Launch learning journey (LMS)
	Skill Development School	 Train truck drivers to be professional and safety-conscious				
	Green Industry- Level 5 Green Network		2 companies	7 companies	 Expand collaboration	3 companies
	Life Saving Rules					Announce Life Saving Rules
	Contractor Safety Management (CSM)	 Manage contractor safety by various activities				Conduct Contractor Safety Management System

Enhanced Safety

Challenge: Supplier’s occupational safety poses a significant risk. Reduction of work-related accident, injury and fatality rates among suppliers therefore is a target for which SCG must work towards effectively

Management Approach: SCG implements Contractor Safety Management (CSM) program in collaboration with suppliers

• Organize work standards, training that emphasizes how to work in safety, a tracking system for supplier’s safety management to support, share knowledge and advise supplier/contractor to ensure that safety is always present.

• SCG Cement-Building Materials manages safety at construction sites where work steps are of high risk of accidents, through the CSI Contractor Safety Management guideline. This framework starts with the process of selecting contractors, contract preparation and ensuring contractual obligations, equipped with safety manual, working onsite as professional, disciplinary actions. During active construction, apart from operation control, we

organize trainings to reinforce safety knowledge and skills to contractors. We also use reward and recognition as a morale booster and incentive to foster safety at work, and build an enabling environment for safe work. We set a “quick win” target of zero accident for well performing contractors.

• SCG Chemicals selected suppliers to join the CSM program from among the rank of critical suppliers and whose operations involve high safety risks such as welding jobs, water jet cleaning and scaffolding. Criteria and performance indicators were stated explicitly in the contract to incentivize, whereas from our end, we track safety indicators at both individual and project levels.

• SCG Packaging prepared a manual on supplier management guidelines that detail steps from selection and operation control, to monitoring and assessing supplier’s performance. This manual is meant for every factory to apply in supplier’s safety management.

Result: in 2017, 64 contractors joined the CSM program of SCG

“ Safety is the First Priority. We care and ensure our staff with good working system. I think that this is sustainability in business. Quality comes with safety. If we prioritize safety, the quality will be together...

Joining CSM with SCG Chemicals makes our team in Banchang Maintenance 2004 Co., Ltd. have an opportunity to practice and further enhance safety processes as concrete manner. This leads to efficiency, effectiveness as well as contractors trust in safety sustainably. CSM is the good project. I believe that if other companies implement CSM, it will bring to safety leading to effectiveness like us.



Banjong Ampaiwikrai
Managing Director,
Banchang Maintenance 2004 Co.,Ltd. (BMC)

Green Procurement in 2017

194 Suppliers

Suppliers in the Green Procurement List

> certified that their production processes are environmentally friendly, including water, energy and waste management and promoting the use of recycled materials.

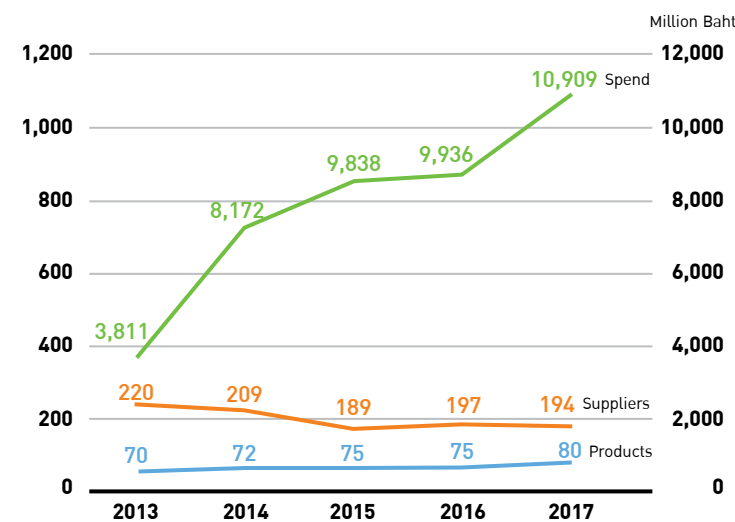
10,909 Million Baht

Green Procurement Spend

80 Products

Number of Products Registered in the Green Procurement List

Green Procurement Spend and Products in the Green Procurement List



Procurement of Products and Services From Local Suppliers in 2017

SCG is aware of the importance of economic inclusiveness of the local community. That is why we encourage the procurement of locally sourced products and services in Thailand.

82%

Share of General Products and Services Spend are Local Procurement Spend

Go Green Together

Background: SCG is committed to its leadership in sustainability, and the goal of greening the entire supply chain. One of the key indicators is the Green Industry certification system under the Ministry of Industry. There are 5 rankings in the Green Industry certification. SCG sets its sights on Level 5, the Green Network, while bringing on board along with us our partners/suppliers to achieve varying levels of Green Industry certifications.

Management Approach: Conduct environment risk assessment and classify suppliers according to the level of risk to help frame the management plan to support the supply chain towards the direction of Green Industry. We organize an annual learning seminar “Go Green Together” for our suppliers. We conduct factory/site visits to provide advice on how they can improve work processes in line with Green Industry standards.

Since 2014, SCG companies that are certified Green Industry Level 5 are 12 companies:

- The Siam Cement (Lampang) Co., Ltd.
- The Siam Cement (Ta Luang) Co., Ltd. (Ta Luang Plant)
- The Siam Cement (Ta Luang) Co., Ltd. (Khao Wong Plant)
- The Siam Cement (Ta Luang) Co., Ltd. - limestone and shale mine
- The Siam Cement (Kaeng Khoi) Co., Ltd.
- The Siam Cement (Kaeng Khoi) Co., Ltd. - limestone and shale mine
- The Siam Cement (Thung Song) Co., Ltd.
- The Siam Cement (Thung Song) Co., Ltd. - limestone and shale mine
- Map Ta Phut Olefins Co., Ltd.
- Rayong Olefins Co., Ltd.
- Siam Kraft Industry Co., Ltd. (Wangsala Plant)
- Thai Paper Co., Ltd. (Kanchanaburi)

Result: In 2017, SCG contributes to supporting 777 suppliers successfully certified Green Industry Level 2 – Green Operation.

Other Progresses

- **SCG People Competency:** SCG continues to hold regular training sessions and awareness activities to enhance our employees’ competency. Shared learning and experience sharing have taken place continually. In 2014, we started working on a competency platform of SCG Academy Structure. In 2017, we organized the Learning Journey which forms part of the Learning Management System (LMS). On parts of the Supply Chain Academy consisting of Supply Chain Management, Procurement and Logistics equip our employees with the competency required to manage the supply chain and procurement operations efficiently, while applying sustainability into the work processes.

- **Life Saving Rules:** The first priority for SCG is safety at work, and that is why we came up with the 9 Life Saving Rules mandatory for both our employees and suppliers/contractors for further reassurance of safety. The Life Saving Rules came into force from January 1, 2017, and we have since communicated to our suppliers and contractors the guidelines for safe work as part of the contractual obligations to fulfill.



Biodiversity and Ecosystem

Risk

Stakeholders now have high expectations on environmental management. And with stricter laws governing environment and bio resources conservation both nationally

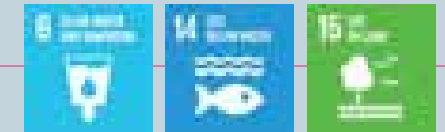
and internationally, absence of sound biodiversity guideline is likely to impact SCG's business in the future.

Management Approach

SCG established the SCG Biodiversity Committee in 2017 to provide oversight for our operations' conformity with international standards on biodiversity management and to foster multi-stakeholder cooperation under the concept "Business, Community and the Environment" can

coexist sustainably. Another priority is about generating "net positive impact" in all processes involved, and communicating with the community and stakeholders so they know and understand, and promoting the image of the company over the long term.

Target



- All SCG quarries in Thailand develop a master plan on rehabilitation, and a Biodiversity Management Plan, 100% complete by 2019.
- Biodiversity index in the rehabilitated areas must be comparable to that of natural forest buffer zone at a Similarity Index of over 60% by 2022.
- Achieving 10% coverage of biodiversity conservation area as certified by FSC standard at 2 agroforestry sites (Kanchaburi and Kamphangphetch), or about 25,000 rai by 2018

Strategy 1

Manage biodiversity sustainably

Monitor and study national and international regulations or laws relating to biodiversity conservation to apply these to the management, with clear indications to help utilize results to improve and advance sustainability work.

2

Be a role model in biodiversity conservation

Conduct study, survey, research the area, in both physical and biological aspects, to collect database for impact assessment, and to define ways to rehabilitate and conserve biodiversity, until there is a model biodiversity conservation area and a learning center to be replicated in other sites of SCG and partners'.

3

Engage communities and stakeholders on the cause of biodiversity conservation

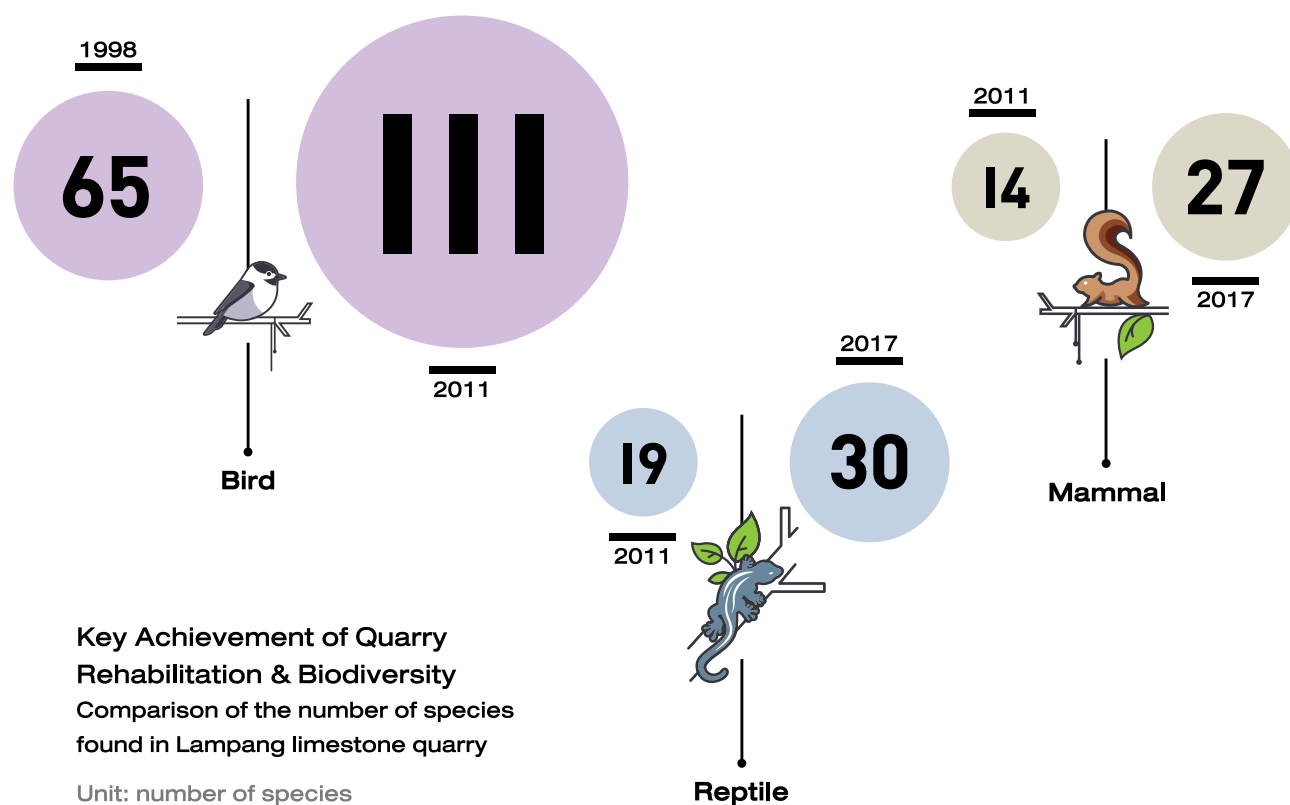
Communicate and engage regularly with the community, to foster cooperation in rehabilitation and conservation, and on co-benefit from the fertility and biodiversity that we all help to maintain. Work with experts to generate models that are customized to diverse local contexts, ecosystem and biodiversity.

Actions in 2017

Key Achievements of Quarry Rehabilitation & Biodiversity

Implementation: For the past 20 years, SCG has continuously implemented quarry rehabilitation and biodiversity management, focusing on limestone ecosystem restoration of each quarry.

The key achievements of quarry rehabilitation are of satisfactory in the abundant of ecosystem especially the natural succession of local species of flora & fauna.



SCG Biodiversity Focus Group Meeting

SCG held a CCS Biodiversity Focus Group Meeting on 26 January 2018 to exchange knowledge among internal units and external stakeholders including the Forestry Department, Office of Natural Resource and Environment Policy and Planning, technical specialists who are advisors for quarry rehabilitation from Kasetsart University, Chiang Mai University, National Metal and Materials Technology Center (MTEC) Biodiversity-Based Economy Development Office (BEDO) (Public Organization)

At the meeting participants shared

know-how, Mine Closure Plan, and guideline on Final Land Use. Participants agreed that the approach and technique that SCG has implemented are commendable and should be extended further across the mining sector, with the learning center at each of the four sites as model. Participants also recommended strengthening cooperation with communities around the site, and planning of land use before handing back the site to the authority, as well as producing media materials to communicate the achievement.

Establishment of SCG Biodiversity Committee

Strategy: To ensure sustainability of biodiversity management, the biodiversity management at the level of business units that form SCG must be streamlined to comply with technical and international standards, and therefore there is knowledge exchange among business units.

Action: SCG Biodiversity Committee was established in August 2017. Committee members are representatives of the Sustainability Working Group of each and every business unit and of the corporate side, as well as units dealing with biodiversity management including representatives from the quarry rehabilitation and biodiversity working group, from Siam Forestry Company Limited, and from the CSR Division of SCG Chemicals.

The Committee's duty is to formulate policy, target and guideline for SCG's biodiversity management to comply with international practices including WBCSD, CSI, FSC, GRI, to network with external parties with the expertise and capacity to manage biodiversity nationally and internationally, as well as to communicate and engage with stakeholders, staff to join the effort. In addition, the Committee monitors the performance of each business unit to make sure work proceeds on track according to plans.

Result: In 2017, SCG Biodiversity Committee met twice.

A Book on Living Quarry

Background: SCG Quarry Rehabilitation and Biodiversity Working Group has been active over the past 20 years conducting research and experiment a variety of techniques in collaboration with various organizations with the sole objective of rehabilitating and recovering biodiversity loss at the target sites to the best of our ability. Efforts to date have been quite satisfactory for SCG Cement-Building Materials at four quarries in Kaeng Khoi and Thaluang in Saraburi, Lampang Quarry in Lampang province and Thungsong Quarry in Nakhon Si Thammarat. Extracting knowledge and lessons learnt to share with stakeholders and the public would play a part in raising awareness and commitment to biodiversity conservation for sustainability.

Implementation: The Working Group has collected knowledge from the experience of quarry rehabilitation and biodiversity and put it together in a book form titled "การฟื้นฟูเหมืองหินปูน" [Rehabilitating Lime Stone Quarry] published end of 2017. In 256 pages, the book captures the knowledge of rehabilitation work and biodiversity, identifying success factors and key learning points to carry rehabilitation work forward. The target audience of this publication are SCG units including the quarry rehabilitation team and external parties including the mining sector, community, technical experts.

Key contents in the book consists of laws and regulations governing the sector, the quarry rehabilitation master plan, steps in detail starting from site preparation post-mining, survey and preparation of saplings, tree planning, caring and maintenance, monitoring and evaluation, and case studies from projects at all four quarries along the themes of rehabilitating steep cliff area, conservation of indigenous plant species, biodiversity consideration,



knowledge management on local biodiversity, and an annex listing indigenous plant species in each quarry.



> Link to download the publication

Biodiversity from the Fish HomeProject

Strategy: Engaging and interacting with the community and stakeholders to raise awareness and understanding about conservation

Background: As local fisherfolks in Rayong province told us about the rapid decline of fish and marinelife population, SCGhas started a collaboration with the Marine and Coastal Resources Management Office 1 (Rayong) and the fisherfolks' group to implement the "Fish Home" project in Rayong since 2012. Together we explored and fnally come up wih "Innovation Fish Home from PE100 Pipes." Under the "waste to value" concept, this innovation uses the plastic pipes that were disposed of after the moulding process as raw materials to design a habitat for fish and marine life. Currently about 1,200 such fish homes have been placed in the sea along the coasts of Rayong and Chonburi provinces.

Throughout the five years, this fish home project has mobilized public-private-community participation, resulting in over 8,000 volunteers from all over

Thailand to fulfill the marine ecosystem. In addition to generating more income for 29 groups of local fisherfolks, the project added 30 sq.kms. area for conservation, as the local fishermen and communities pledged to protect the zone and marine species within it from aggressive fishing practices. The local stakeholders see this as a depository of marine species that can be the source of livelihoods of their posterity, and sustainability of traditional fishing livelihoods. From the success of this program, SCG plans to extend the scope to add 1,000 fish homes to coastal areas in Chantaburi and Trad, for complete coverage of the east coast.

Implementation: In 2017, apart from constructing and installing 370 fish homes in Rayong and Chonburi, the project has conducted a biodiversity survey by a team of specialists, and as part of the survey data are collected every 3 months. To keep up with public awareness drive, we organized the "Volunteers for Building Fish Homes activity" at the public park in Laemcharoen, Rayong. Over 500 volunteers joined the mission and handed over the new set of homes to the fisherfolks groups to install at sea.

Result: Biodiversity, and enhanced fertility of marine resources in the vicinity of the fish homes.

- The number of fish specie found in fish home area is 18 families 35 species. (Comparing to fish found in coral reef around Samed Island in Rayong, there are 22 families 65 species) There are economic fish such as Yellowstripescad, Grouper, Talangqueenfish, Goldstripedsardinella, Snapper or fancy fish such as Batfishes Butterfly fish
- There are phytoplankton, zooplankton(such as krill, shrimp larvae, fish larvae and also jelly fish) founding fauna such as barnacle bivalve sponges including other marine creature (sea star or sea urchin) more than 120 species.

Elimination of Invasive Alien Species to Increase Biodiversity

Challenge: SCG Packaging promotes agroforestry to supply raw materials for pulp production. In doing so we comply strictly with the sustainability guideline of the Forest Stewardship Council™ (FSC™) which requires a minimum 10% share of agroforestry acreage to be set aside as biodiversity conservation area. In 10 years (since 2007) of agroforestry development by Siam Forestry Company Limited, under the Sustainable Forest Management Project located in Kanchaburi and Ratchaburi only, we have a total of 12,438 rai, of which 2,253 rai are conservation zone, or about 18% of total coverage (higher than the benchmark of 10%). The conservation area is called "Ban Huay Sapansamaki Community Forest," located in the subdistrict of Nong Rong, Panomthuan District, Kanchanaburi. The Company together with communitiesand the Royal Forest Department established rules in the management and conservation for sustainability. Still survey results showed the invasion of alien species, which is a threat to biodiversity, and so we worked with the communities to find solution to this issue.

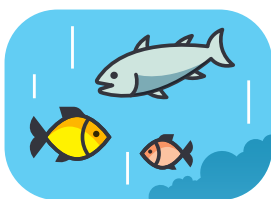
Implementation: From the biodiversity survey conducted in 2013, we found that this community forest is a deciduous forest housing at least 24 species, the prominent ones being dominant tree such as Wrightia arborea (Dennst.) Mabb.,

Sindora siamensis Teijsm.ex Miq. In 2014-2017, we implemented a project to get to rid of Invasive Alien Species which grew so fast, vying for space and threatening the survival of indigenous species. We identified 2 types of weeds that must be eliminated namely Lantana camara and Chromolaena odorata, referenced to the list of invasive alien species Thailand must guard against issued by the Office of Natural Resources and Environmental Policy Planning (ONEP).

Result:

- In 2014-2017, elimination of alien invasive species was conducted in 220 rai, and we made a joint plan communities to manage 50 rai per year.
- Organize training activities on forest conservation for 60 youths from communities around the forest.
- Organize a study visit for the Community Forest Committee to see collection and breeding of saplings in Khon Kaen, and we joined the sub district community forest committee, villagers, students and soldiers based in the area to plant 300 trees of indigenous species such as Afzelia xylocarpa (Kurz) Craib, Sindora siamensis Teijsm.ex Miq.,Dolichandrone serrulata (Wall. ex DC.) Seem., Phyllanthus emblica L., Oroxylum indicum (L.) Benth. exKurzto enhance biodiversity.

Biodiversity in fish home area



Fish

Fish Home
18 families **35** species

Coral reef around Samed Island
22 families **65** species

Same result
25 species



Phytoplankton

Fish Home
55 genus
86 species

Rayong estuary
116 genus
230 species



Zooplankton

Fish Home
6 phylum

Rayong
8 phylum

Gulf of Thailand
11 phylum



Benthic marine organisms

Fish Home
6 phylum **35** group*

Map Ta Phut port
5 phylum **28** group*

* As taxonomic classification of benthic marine organisms is different among groups, a term "group" is used instead of "class", "order", and "family" to conveniently compare data in this report.





Social and Community Involvement

Challenge

At SCG, we believe that business will grow sustainably if it brings about development and prosperity to community and society. The acceptance, trust and reliability are significant to support the sustainable growth of our business, we,

therefore, actively engage with other stakeholders, for advocacy and actions that will lead to improving the quality of life in every aspect both in Thailand and in the Region.

Strategy 1

Building and developing community's capability in a sustainable approach and expand the achievement of role model communities to other community networks.

To improve the competency of the locals in the community, pass on a management and concept on sustainable development so that local community can be self-reliant and apply to handle any related problems. The concrete success could be scalable to other community networks.

2

Promoting an involvement of employees and stakeholders for creating sustainable values for society

To employ company's competency and knowledge to encourage the involvement of all stakeholders including employees, private and government sectors as well as specialists so as to achieve the better quality of life and advancement of communities and society.

Target



- The community and society are able to deal with problems thrive sustainably, and attain self-reliance and readiness to be a role model for other communities.

Management Approach

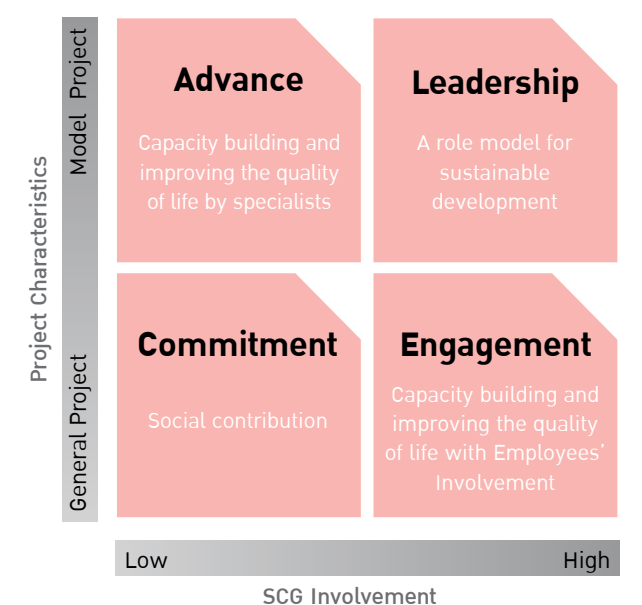
SCG establishes the "CSR Committee for Sustainable Development", consisting of the Company's Directors and top Executives to determine CSR policy and direction on social development in order to come up with concrete actions for key challenges of the society, to elevate the people's life quality and to strengthen Thailand's capability in many aspects. In addition, SCG Foundation will help implement its key mission to

maximize the capacity of human resources and equip them with integrity and knowledge so that they can contribute to the development of the country. Meanwhile, SCG's Community Relation Units located at sites around SCG's manufacturing facilities will help engage in capacity building for community members so that they have better quality of life, mutually grow with the business and be self-reliant in a sustainable way.

Types of Projects

With the strategies to sustainably improve the capacity of community and encourage the involvement of employees and stakeholders in all aspects, SCG determines four types of social-related projects as follows:

1. A role model for sustainable social development.
2. Capacity building and improving the quality of life by specialists.
3. Capacity building and improving the quality of life with Employees' Involvement.
4. Social contribution.



Actions in 2017

1. A role model for sustainable social development

To get fully involved and tangibly solve the problems of the country. The success becomes the project model for other organizations to replicate.

Conserving Water for Tomorrow: A Sustainable Water Management for the Community

Background: Water is essential to all walks of life both in consuming and using in agriculture. The ongoing climate change leads to a drought and severe flood in many region of Thailand, therefore encouraging the local community to gain insights into the real problems is essential. This approach will allow local community to understand root cause, to create a sense of ownership and to devise an effective solution against the occurring changes.

Progress:

“Conserving Water for Tomorrow” Project

SCG has put in practice His Majesty the Late King Bhumibol Adulyadej’s sustainable water management initiative for more than 10 years with the aim to strengthen the community around the SCG’s facilities by constructing more than 75,500 check dams at the watershed and then collecting water from the check dams and store in Sra Phuang ponds for agricultural purposes.

- At Ban Sa Phae Community, Amphoe Chae-Hom, Lampang, seven Sra Phuang ponds have been built to collect water from check dams in the volume of 30,400 cubic meters and covered the agricultural area of 500 rai. As a result, there were many changes in community’s living condition, incomes and better quality of life. The intensive agriculture with low water consumption increased the cultivating periods to 7 times a year and generated the average income of 100,000 baht per person per year. The total income of this community soared up to 18 million baht per year. This community was then ready to be a role model to share the water management practice to other interested communities.

“The Water Conservation Journey to Carry on H.M. the Late King’s Initiative by Building Check Dams across Thailand”

This activity has expanded from the success of sustainable water management to other community networks and passed on to new generation so as to continually pursue H.M. the Late King Bhumibhol Adulyadej’s initiatives in water management by building more than 300 check dams in Ban Khao Mu Si Community, Kanchanaburi; Ban Nam Pu Community, Nakornsri Thammarat and Ban Muang Waan Community, Khon Kaen.

Community Learning Center – “Natural Museum on Community’s Water Management – A Royal Initiative Project”

SCG in cooperation with Utokapat Foundation under Royal Patronage has expanded the know-how on community water management in line with the Royal Initiative by application of learning process, community engagement and empowering them to tackle water-related problems while SCG performs as a facilitator to train the successful community to pass on the achievement to other community networks. In 2017, the Community Learning Center has been established to be a role model for a success in problem solving on water management according to geography and socio-geography based on local wisdom.

- Natural Museum at Pa Phu Thum Community, Phu Kratae, Khon Kaen has been set up to solve repeated drought area for more than 40 years by integrating information technology with the local wisdom to implement a water management at the elevated and ridge areas by constructing a canal to retain water run-off and building small connected canals to channel water into “Monkey Cheek”. The project therefore increased the volume of water in the amount of 417,493 cubic meters and the community was able to reuse the water without adding any cost which could generate the income from agricultural outputs more than 12 million baht a year.
- Natural Museum at Ban Phret Community, Trad was the only one and successful sample of mangrove management and fresh water management in Thailand by integrating water management of sea water, fresh water, brackish water and waste water. This idea was to mitigate the problem on brackish and sea water in the agricultural areas by using fresh water to push away

sea water. and collect fresh water in unused prawn ponds. This resulted in an increase of fresh water storage in the amount of 1,776,505 cubic meters and reserves of fresh water for the whole year usage. The community was able to generate an income of 30,000 baht per family.

Eucalyptus to Solve Saline Soil: an Innovative Model for Northeast Communities

Background: The northeast communities have faced the problems on agriculture for a long time due to the fact that more than 19.17% of the agricultural areas were affected by saline soil. Some areas could not cultivate any crops or give lower yield leading to low income or poverty, abandonment of farmland and homeland which caused a string of economic and social problems.

Implementation: SCG Packaging collaborated with National Science and Technology Development Agency to conduct a research on a species of eucalyptus which could grow with high yield on the saline soil. Eucalyptus root system help absorb salinity in soil and also control the groundwater at a level that does not effect the soil surface. In addition, SCG Packaging joined hands with the Land Development Department to find some pilot areas and apply an innovative cultivating technology in combination with local wisdom. For example, eucalyptus branches and leaves are used to increase the humus in soil. When the soil quality was improved with organic substances, the agricultural cultivation was then more effective and friendly to the paddy fields. The project then promoted the planting of eucalyptus on paddy fields’ ridges and a wide range of fruits and vegetables tolerant to saline soil for the extra income.

Result: The project has been launched since 2010, the results were as follows:

- More than 300,000 rai of saline soil have been solved and rehabilitated.
- The community could increase the average yields of jasmine rice planted on the saline soil from 150-225 kilograms to 450-750 kilograms per rai.
- The community earned an extra income from eucalyptus plantation at the average of 14,000 baht per rai per 4 years and their quality of life were improved.



Fish Home for a Sustainable Fishery

Background: The deterioration of coastal ecosystem directly affected the inshore fisheries especially the local fishermen who had to give up their livelihood because of limited sources of fish and sea creatures.

Implementation: SCG Chemicals joined hands with the Office of Marine and Coastal Resources Management 1 (Rayong) and local fishery groups in Rayong and Chonburi provinces to assemble “Fish Home” by using PE100 pipe and placing into the sea as a nursery shelters for small sea creatures. This area was then determined as the marine protected area.

- Throughout the past 5 years, the project built up more than 1,200 fish homes, encompassing 29 fishery groups in Rayong and Chonburi and helped increase marine ecosystem. More than 120 species of sea creatures were found, especially commercial fishes and rarely-seen sea creatures, such as yellow-stripe scad, grouper, Talang queenfish, goldstriped sardine, streaked spinefoot, and snapper, etc.

- The harvest of fish increased 10% annually for inshore fishery and fishermen enjoyed more income. In addition, they did not need to go farther for fish catching.

- In 2017, the fishermen earn more income from the distribution of fresh and clean seafood to many restaurants located in tourist attraction areas in Rayong and gained the consumers’ confidence and awareness to take care of “Fish Home” a conservation area for sea creatures to pass on sustainable earning from fishery to the descendants. The increasing fish stock has brought more income for local fishermen, eliminating the need for them to sail farther for the catch.



Skilled Professionals of Future Projects, Thailand Crucial Force

Background: Demand of skilled professionals for the industrial and service sectors in Thailand have been risen significantly and would affect the development of country in a long term. The preparation of students to work as professionals was essential to ensure that the labor force would be in line with the government's "Thailand 4.0" policy or an economic transformation to an innovation-driven economy. As such, the vocational graduates would be a major force in the industrial and service sectors to drive Thai economy in the future.

Implementation: SCG Foundation has encouraged the enhancement on the vocational study by offering non-binding scholarships in the fields of industrial and service throughout the consecutive 5 years of studying from the Vocational Certificate level to the High Vocational certificates. In the meantime, SCG Foundation also worked hard to relay and transform students' attitudes so that they would have a proper way of life in society as "Moral and Talented". Many activities were also initiated progressively to develop the grantees' competency.

Result: In 2017, the scholarships for skilled professionals have been granted to 400 students and there were more than 1,500 students receiving the scholarships.

Temporary Public Toilet, an Integration of Innovative Products for the Public

SCG in partnership with Bangkok Metropolitan Administration and the Ministry of Industry built five provisional knock-down public toilets by integrating its innovative products and others from 12 suppliers to serve all users ranging from men, women, and the elderly and people with disabilities. The temporary public toilets were built by using SCG Heim modular structure, assembled with roofing, wall, smart board and SCG construction materials, COTTO ceramic and sanitary ware and Willy toilet partitions including electricity and sanitation system. The toilets were on service around Sanam Luang for crowd of people who had been gathering to pay respect to His Majesty the late King Bhumiphol Adulyadej Rama IX since October 2015. After the Royal Cremation Ceremony, the temporary public toilets had been dismantled and re-installed to serve the public at several places, such as Nagaraphirom Park, Pongpraram Market Siam Night Plaza, Thammasat University, Rangsit Campus, Pathumvananurak Public Park, and Chatujak Park.



2. Capacity Building and Improving the Quality of Life by Specialists

To enhance the social capability which needs certain kinds of expertise or specialization to handle or fulfill the mission of raising the quality of life. SCG supports and promotes so that the outcome could be widely expanded and scaled up.

Sharing a Brighter Vision, 3rd Year

Background: Cataract is caused by weakening corneas which lead to unclear vision. An appropriate treatment is provided only in city hospital and needs long waiting time whereas poor treatment can lead to blindness and affect patients' life.

Implementation: SCG in collaboration with the Crown Property Bureau and Ban Phaeo Hospital (Public Organization) implemented the "Sharing a Brighter Vision Project" in Myanmar for the third consecutive years at Mawlamyine General Hospital in Myanmar. In 2017, the project provided surgery to restore eyesight for 209 patients and enable them to get back to normal way of life with family.

The program also educates and provides information of eyecare to the locals through television and internet so that they would take better care of their eyes. Local people are encouraged to share knowledge, experience, and caring among others via social media so that the eyecare would be thoroughly broaden across their own country.

Pundek @ SCG Badminton Academy

Background: Co-founded by SCG and the Crown Property Bureau supported the young promising badminton players in a systematic approach to be professional badminton players by bringing in the sport sciences to develop the physical fitness, the movement and the concentration for young adolescent. Furthermore, the project would inspire the young to be professional badminton athletes in the future and also created more understanding for the parents on food nutrition of their children.

Implementation: In 2017, there were 40 young badminton athletes aged between 6-11 years old and their parents (40 persons) attending the 2-days excessive training at SCG Badminton Academy on Nang Linchee Road with the objectives to provide an understanding of sport sciences, to do physical training, and to inspire the young athletes who wish to become professional badminton players in the future.

“ The 3rd Sharing a Brighter Vision Project has been done effortlessly. I'm very impressed every time I visited here because we have seen the happiness of those who used to be blind and can see everything again. When seeing smiling face of patients, I felt joyful. I believe that giving the light is such a great giving.”



Patthasaran Thanasupan, M.D.
Ban Phaeo Hospital (Public Organization)

3. Capacity Building and Improving the Quality of Life, with Employees' Involvement

To encourage employee engagement in raising the quality of life or build the capacity in different aspects of the society such as community development, making a living and education.

Sharing Opportunities Drawing the Future

Background: With the belief that a good society should have good and smart people with voluntary mindset, SCG Foundation then initiated the “Sharing Opportunities Drawing the Future Project” and implemented the project for 11 consecutive years. The objectives were to motivate and support SCG employees to carry out projects for the public without any conditions.

Implementation: In 2017, the projects were implemented under the idea of “Dee Mai Ting Taew” (to pass on the public service mind through generations) as follows:

- SCG employees have submitted 358 projects to SCG Foundation and 207 projects have been approved.
- More than 2,000 SCG employees took part in community-based projects which were mainly initiated with creativity and maximized the competency of SCG's people for the sustainable society.

Paper Band: Weaving to Connect the Community

Background : A local wisdom in making a basketry work of local people in Tha Takrao, Tha Muang District, Kanchanaburi has existed for a long time and passed on the know-how to new generation through Non-Formal Education Center at Tha Takrao. Later, the local people suffered from the shortage of natural raw materials, they used other materials to make the basketry instead.

Implementation: SCG Packaging recognizes the pride of local community towards its identity in basketry work, so it supported the paper band, the waste from production process but having proper size and quality, to be used as a substitute for



scarce natural materials. The project aimed to share the local wisdom knowledge on basketry and to support the usage of paper band in many products among students and many housewife groups in order to create their own identity.

Result: Tha Takrao community generated income of more than 676,000 baht per year from handicraft. More than 300 participants joined this activity and produced variety of products, for example, household products such as basket, tray, coaster; health products such as finger lock protection, camphor bag; fashion products such as handbag, shoulder bag, net bag; and seasonal products such as flower basket, gift box.

Sunflower Field, a Local Attraction

Background: Tambon Bor Thong Community, Kabinburi District, Pracheenburi were given a land of 16 rai in Bor Thong Industrial area in order to plant the sunflower seed and made the area to become the tourist attraction with the hope that it could generate extra income for villagers in the community. However, the villagers faced many problems on the shortage of water and soil degradation.

Implementation: SCG Packaging by Thai Cane Paper PCL. in Pracheenburi and Tambon Bor Thong community have worked closely to find a proper solution by using sludge from wastewater treatment to improve the soil's quality and also using treated water from the plant in the pilot areas.

- In 2017, the sunflower flower field turned out to be a famous tourist attraction for over 8,000 tourists and create income to local stalls by 21,000 baht per shop.

- In mid 2017, the government promoted the plantation of the marigold flowers in memorial to His Majesty the Late King Bhumibol Adulyadej so the community of Tambon Bor Thong replaced the plantation of sunflower with the marigold flowers. The marigold field helped generating more income for many stores in the area. In addition, some marigold plants and their flowers were used during the Royal Cremation Ceremony in some areas of Pracheenburi. The community also donated 100,000 marigold flowers to 10 temples during the Kathin ceremony.

Sharing the Dream Scholarships

Background: The Regional Scholarship Awards Projects have been rewarded to the youth in seven ASEAN countries, namely, Myanmar, Laos, Indonesia, Vietnam, Philippines, Cambodia and Thailand. The scholarships would be granted to the good and smart youth who had good academic records and showed the gratitude to their families. This project has been continually implemented since 1981.

Implementation:

- In 2017, 4,000 scholarships have been granted to Thai students with primary school level to university level with estimated budget of 74 million baht. Out of these are 1,680 scholarships are for ASEAN students, totaling 27.5 million baht.
- Since the project inception in 1981, 80,000 scholarships have been granted with the total budget of more than 800 million baht.

“Adventure Water Tank for Kids Project”

Project which modified the unused water tanks to be a playground for special-needed children at the Special Study Center, Educational zone 11, Nakornratchasima, Si Kew Service Unit. These children need a playground to rehabilitate their physical movement and competency which subsequently affect their intelligence and temper. Engagement between employees and local community has led to deep understanding and initiated a project that met the real need and aretruly beneficial to the community.



Scholarship for Children of Forest Rangers

Background: The illegal deforestation and wild hunting in the reserved forest areas of more than 102 million rai, which was equivalent to 31.5% of the total areas in Thailand still existed. However, there were only 20,000 forest rangers who sacrifice their lives to protect forest resources.

Implementation: SCG Foundation believed in human value and wished them to have more encouragement in protecting the forest. We then took part in easing the educational burden for the children of forest rangers by granting the non-binding scholarships to their children. The scholarship would be granted until they graduated a Bachelor Degree so that it would be an educational guarantee that their children would complete their education as expected.

Result: 205 scholarships were awarded to children of forest rangers in 54 areas.

SCG Excellent Model School

Background: In order to respond to the higher demand of skilled professionals in industrial and service sector in Thailand, especially in an installation and maintenance, mechatronic, electrical mechanic, manufacturing industry, construction, electrical control, mechanical, automotive and electrical technicians which are in shortage situation in Thailand.

Implementation: SCG Cement-Building Materials worked closely with many vocational school in Thailand to implement the projects so as to elevate the improvement of traditional vocational students to be excellent in their skills and knowledge as well as to support their work in industrial sectors. The project would include a bilateral study system which the students would study the theory at the vocational schools for one year and then were trained at the company for another year. The studying plan and

on-the-job training would be well designed in order that the students would have the direct experience and were able to improve their work performance in the facilities so that they could be the major force to support the expansion of business in the future.

Result: In 2017, 247 vocational students achieved their graduation in many fields.

School Partner Project

Background: SCG together with 12 private companies collaborated in the “Pracharath” public-private project under the Fundamental Education and Leadership Development Group by selecting qualified employees to take charge of a school partner who will support and share experiences in planning the academic development with school administrators. This was done to create the learning process according to an action-based learning so as to transform the fundamental education system.

Implementation: The project has been implemented in 40 schools in various provinces, namely, Kanchanaburi, Ratchaburi, Chantaburi, Chonburi, Saraburi, Nakornsri Thammarat, and Lampang, by 69 qualified SCG employees. With the SCG’s experience on constructionism learning theory and the principle of sufficiency economy for the sustainable development of the Sufficient Education Center You Sathirakul Young Foundation, we could create the learning process of children to be smart people with morality, and encourage learning skill of students both in academic aspect and the way of life.



4. Social Contribution

To support to relieve and mitigate troubles which affect life of people.

Flood Relief Project for the Southern region

Background: During the flood disaster in the Southern region at the end of 2016 to the beginning of 2017, SCG had initiated the flood relief project in 3 phases, namely an emergency, a rehabilitated and a sustainable assistance phases.

Implementation: Emergency Phase

- 15,800 survival kits and 12,000 sets of paper toilet had been distributed to flood victims.
- Drinking water, packed food and rescue equipments such as boats, life jackets, and lifebuoys have been given to employees with volunteer mind to assist the victims
- The employees helped cleaning Ban Chai Klong School and the Child Development Center at Tambon Teewang, Thung Song District, Nakornsri Thammarat after the flood.
- 63 volunteer employees from SCG Packaging Emergency Response Team (S.E.R.T), who had special skills in rescuing flood victims and patient, helped rehabilitating 44 affected areas.

Rehabilitating Phase

- SCG supported the collaboration project between villages, temples and schools in organizing “Hand in Hand Happiness in the South” activity at Wat Phra Mahathat Woramahawihan, Muang District, Nakornsri Thammarat. With the help of more than 415 volunteers from a voluntary network from Bangkok and local employees, the rehabilitation activities have been done, such as a re-construction of new houses, a renovation of open ground of Wat Phra Mahathat Woramahawihan, a cleaning the areas of Kalayanamitr School and organizing the caravan of “House Repair- Enjoy Happiness”
- SCG Foundation gave educational items and repaired the school building for Ban Pak Bang Klom School and helped constructing a new toilet for the Border Patrol Police School at Baan Lang Aai Mee, Cha-uat District, Nakornsri Thammarat as well as built up an Emergency Shelter for flood victims Center at Wat Ko Saeng, Pak Pa-nang District, Nakornsri Thammarat.

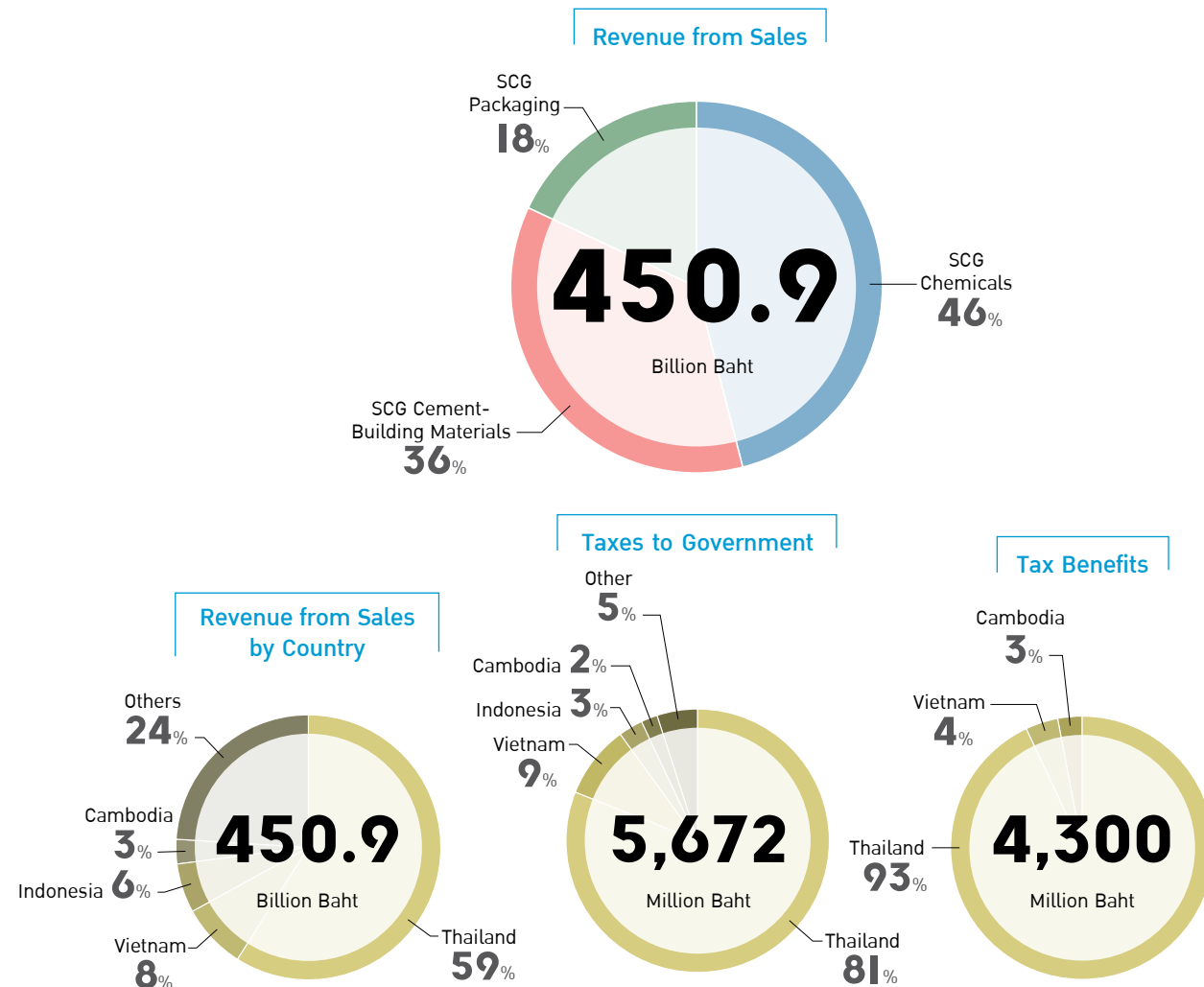
Sustainable Assistance Phase

- SCG Foundation set up revolving funds for vocational rehabilitations in Phattalung and Songkla
- SCG with Utokapat Foundation Under the Royal Patronage of H.M. The King revised their plan and combined the water management with other sectors in the areas in order to sustainably solve the flood disaster.

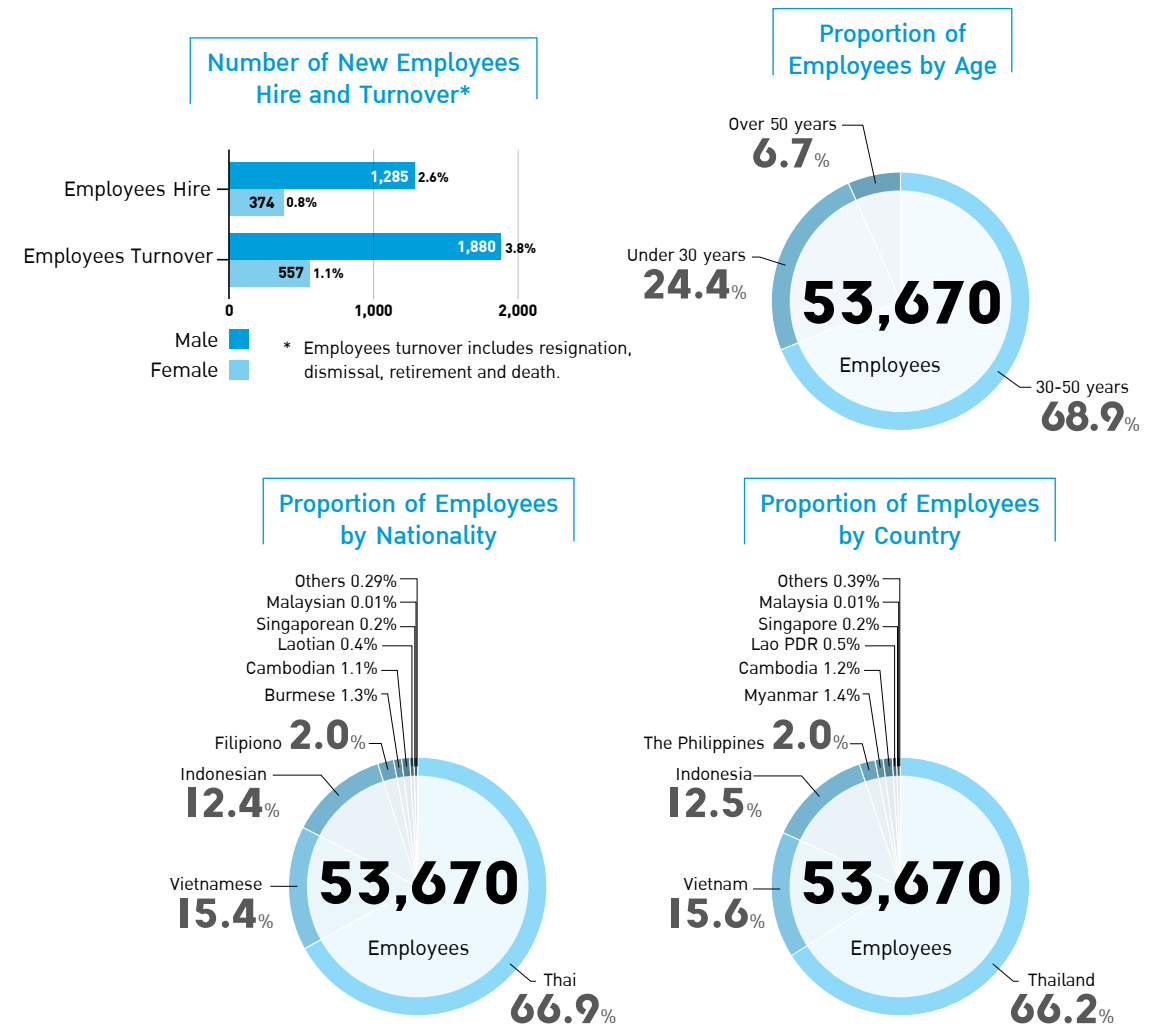
Appendices



Sustainability Performance Data 2013-2017



Performance Data	2013	2014	2015	2016	2017	G4
Economic Performance						
Revenue from sales (Billion baht)	434.3	487.5	439.6	423.4	450.9	EC1
Profit for the year (Billion baht)	36.5	33.6	45.4	56.1	55.0	EC1
EBITDA (Billion baht)	61.3	66.5	82.7	97.8	102.1	EC1
Benefits to employees comprising salary, wage, welfare and regular contributions (Million baht)	32,417	35,356	40,172	42,458	43,676	EC1
Divident to shareholders (Million baht)	18,600	15,000	19,200	22,800	22,800	EC1
Interest and financial expenses to lender (Million baht)	8,193	7,266	9,076	7,572	7,112	EC1
Taxes to government and local government authorities such as income tax, local maintenance tax, property tax and other specific taxes (Million baht)	5,792	5,362	5,430	6,938	6,959	EC1
Privilege tax and others from investment promotion, and research and development (Million baht)	1,156	1,294	3,599	4,827	4,300	EC4
Investments and expenditures regarding community development, social infrastructure and environment (Million baht)	525	555	591	710	689	EC1
Environmental expenditures (Million baht)	2,687	2,542	3,016	2,686	2,154	EN31



Performance Data	2013	2014	2015	2016	2017	G4
Social Performance						
Employee Information						
Number of Employees	49,287	51,100	53,096	53,728	53,670	G4-10
Proportion of Employees by Level						G4-10
• Management	3.4	3.4	3.5	3.5	3.6	
• Supervisor and technical staff	27.4	28.3	28.1	28.6	28.3	
• Operator	69.2	68.3	68.4	67.9	68.1	
Proportion of Employees by Gender						LA12
• Male	77.8	77.5	76.9	76.9	77.4	
• Female	22.2	22.5	23.1	23.1	22.6	
Proportion of Basic Salary of Female to Male						LA13
• Management	0.83:1.00	0.83:1.00	0.83:1.00	0.83:1.00	0.82:1.00	
• Supervisor and technical staff	0.94:1.00	0.94:1.00	0.93:1.00	0.93:1.00	0.92:1.00	
• Operator	0.95:1.00	0.94:1.00	0.89:1.00	0.89:1.00	0.89:1.00	
Proportion of Local Senior Management*	18.3	20.8	20.5	20.8	19.0	EC6
Proportion of Absence by Type						LA6
• Sickness	14.0	15.0	15.6	14.4	14.0	
• Work-related injuries	0.2	0.3	0.2	0.1	0.1	
• Others	85.9	84.7	84.2	85.4	85.9	
Return to Work after Parental Leave of Female Employees						LA3
• Number of employees that took parental leave	202	235	330	210	375	
• Number of employees who returned to work after parental leave ended	202	231	325	203	358	

* Calculate from percentage of overseas senior management and supervisor over total overseas staff.

Performance Data Health and Safety Information	2013	2014	2015	2016	2017	G4
Total Incident Rate (Case/200,000 Man-Hours)						LA6
• Employee	0.361	0.319	0.235	0.200	0.202	**
• Contractor	0.218	0.201	0.235	0.165	0.123	**
Incident Rate (Lost Time Case) (Case/200,000 Man-Hours)						LA6
• Employee	0.067	0.048	0.073	0.041	0.050	**
• Contractor	0.060	0.060	0.055	0.045	0.022	**
Severity Rate (Day/200,000 Man-Hours)						LA6
• Employee	1.695	1.629	1.273	0.906	0.819	
• Contractor	1.577	1.955	1.430	1.334	0.338	
Number of Fatalities (Case)						LA6
• Employee (male : female)	1:0	0:0	0:0	2:0	2:0	**
• Contractor (male : female)	11:0	7:0	12:0	10:0	9:0	**
Number of Fatalities from Motor Vehicle Accidents (Case)						LA6
• Employee (male : female)	1:0	0:0	0:0	1:0	1:0	
• Contractor (male : female)	8:0	4:0	8:0	7:0	7:0	
Number of Chemicals Spillage (Case)*						EN24
• Level 1 : High Severity	0	1	1	0	4	
• Level 2 : Moderate Severity	2	1	1	4	0	
• Level 3 : Low Severity	6	2	0	8	0	

Level 1 : High severity means that the volume of Chemicals spills is more than 2,500 kg (plastic powder or granule is more than 5,000 kg) that leak from primary containment or any spills to environment or causes injury.

Level 2 : Moderate severity means that the volume of Chemicals spills is between 500-2,500 kg (plastic powder or granule is between 2,500-5,000 kg) that can be contained (not reaching the environment), and no injury occurred.

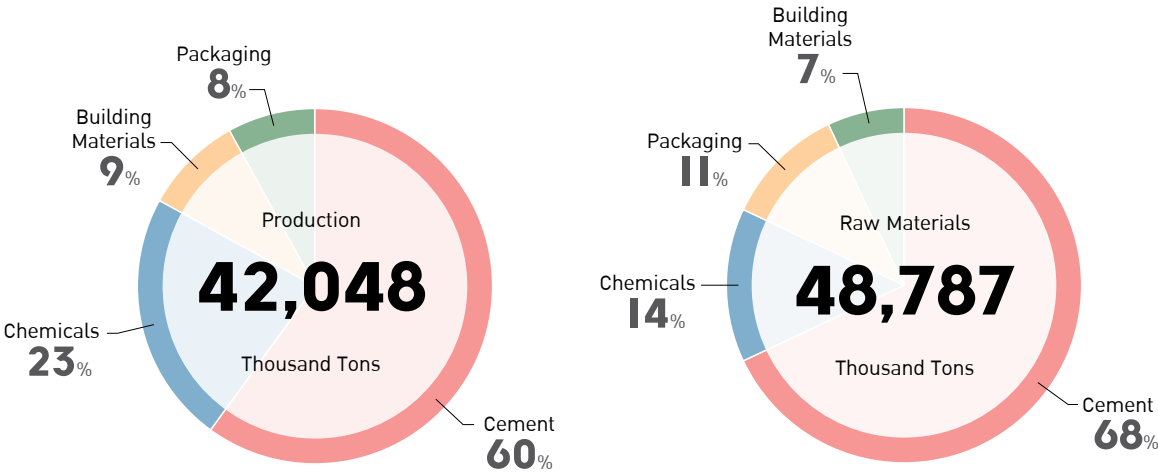
Level 3 : Low severity means that the volume of Chemicals spills is between 50-500 kg (plastic powder or granule is between 500-2,500 kg) that can be contained (not reaching the environment), and no injury occurred.

* Excludes flammable gases and utility Chemicalss, e.g. raw water, filtrated water, distilled water, nitrogen gas, instrument air, service air, or carbon dioxide.

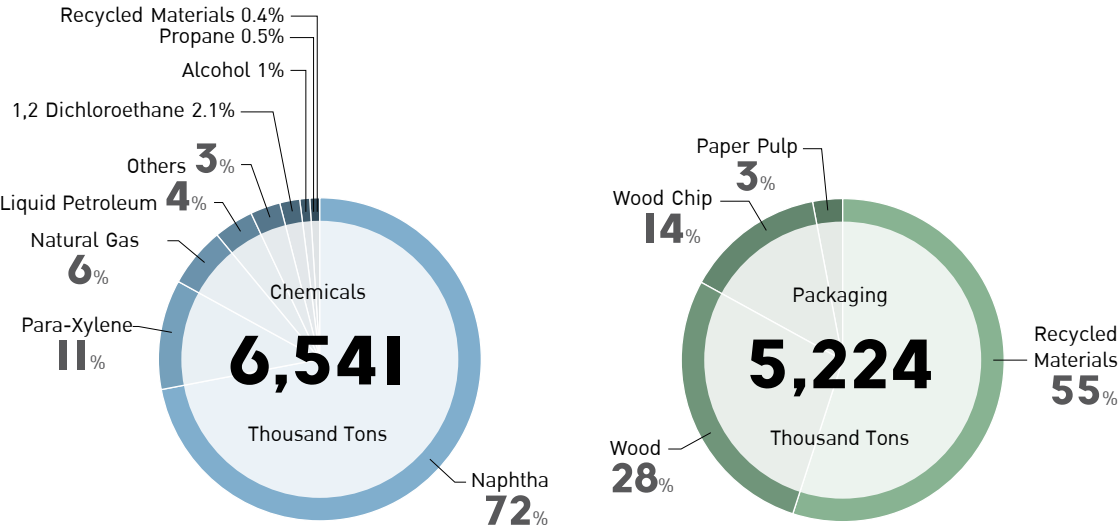
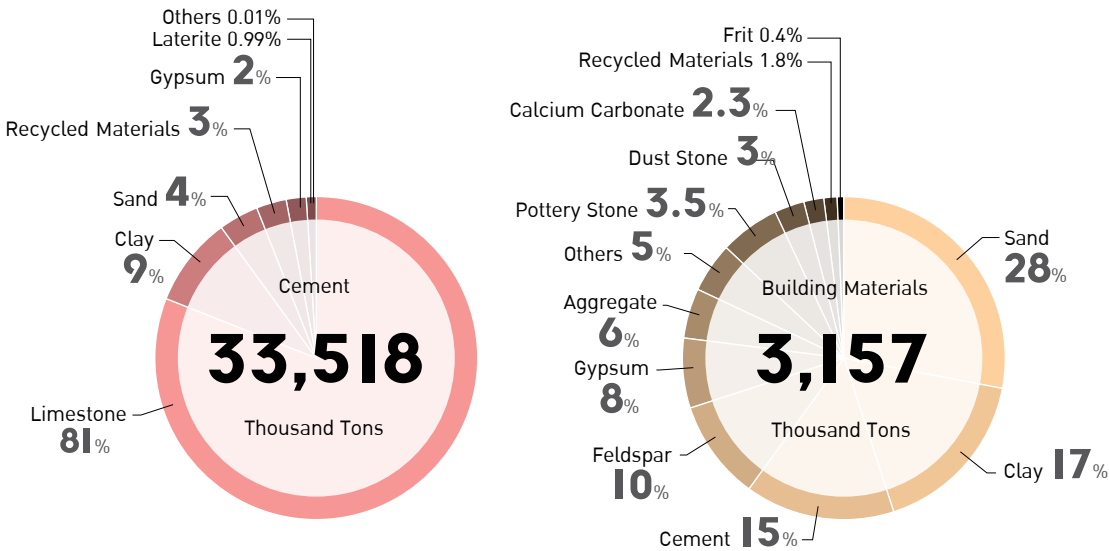
** Within KPMG's limited assurance scope (page 122)

Performance Data Environmental Performance	2013	2014	2015	2016	2017	G4
Production (Thousand Tons)	39,244	40,471	40,770	39,506	42,048	
Raw Materials (Thousand Tons)	45,541	47,294	49,432	49,684	48,787	EN1
Recycled Materials (Thousand Tons)	1,814	2,932	3,253	3,438	3,877	EN2

Production and Raw Materials

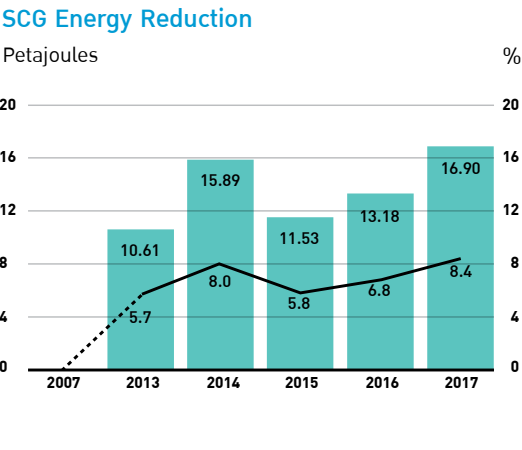
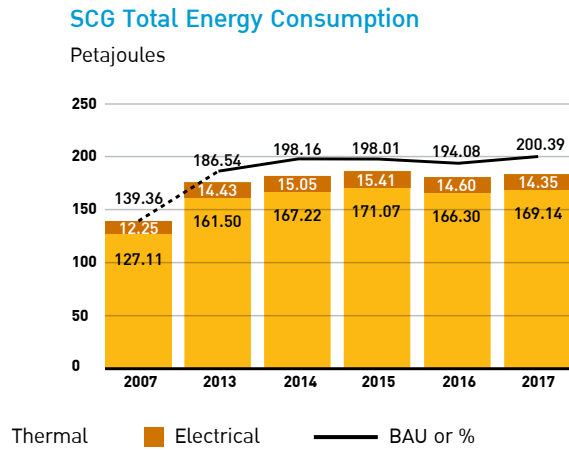
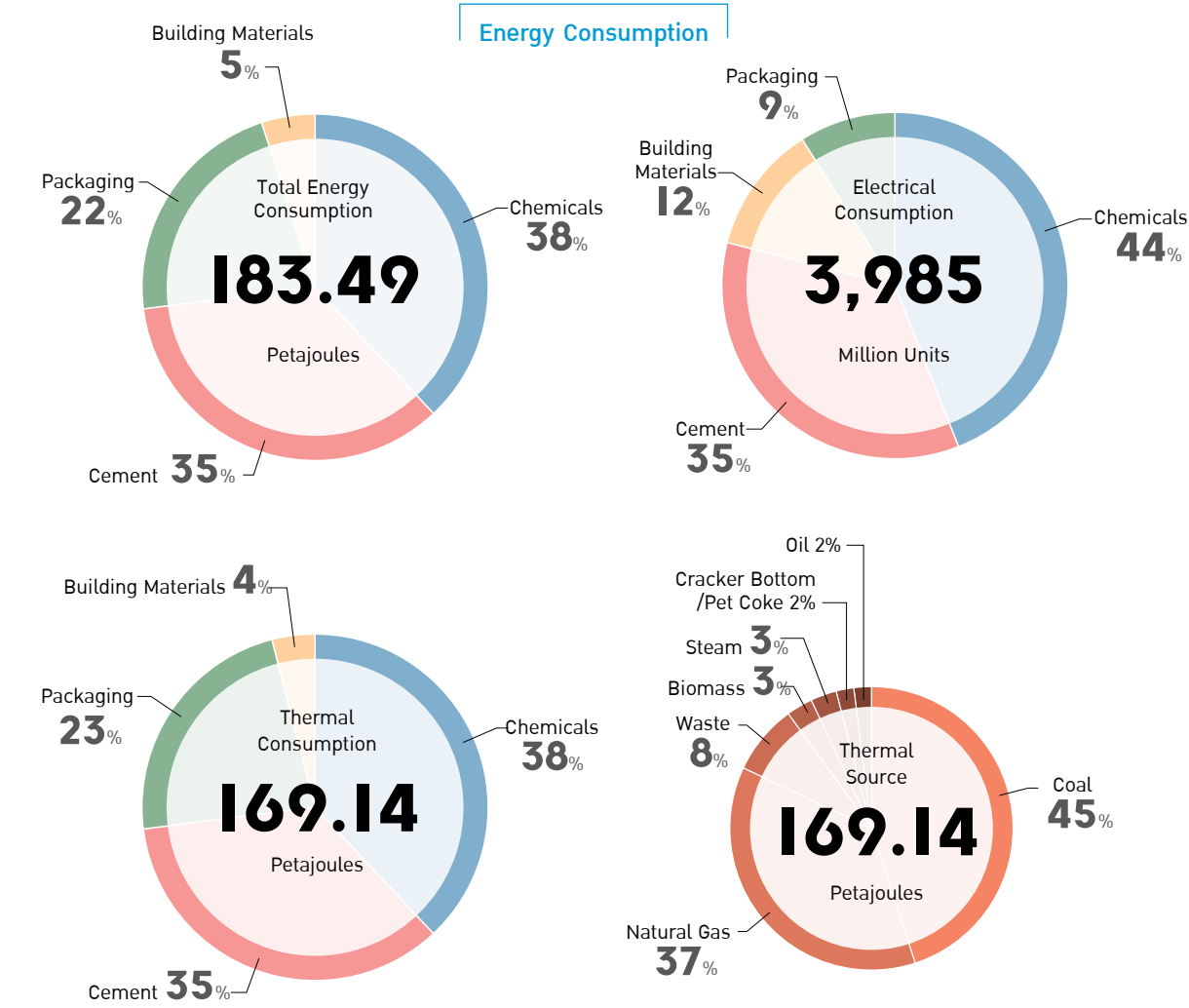


Proportion of Raw Materials



Performance Data	2013	2014	2015	2016	2017	G4
Total Energy Consumption (Petajoules)	175.93	182.27	186.48	180.90	183.49	*EN3
Thermal Consumption (Petajoules)	161.50	167.22	171.07	166.30	169.14	EN3
Alternative Energy (Petajoules)						*EN3
• Biomass	10.26	9.50	6.65	5.50	5.10	
• Industrial Waste	10.70	11.44	11.99	12.37	12.64	
Electrical Consumption (Million kilowatt hours)	4,008	4,180	4,281	4,057	3,985	EN3

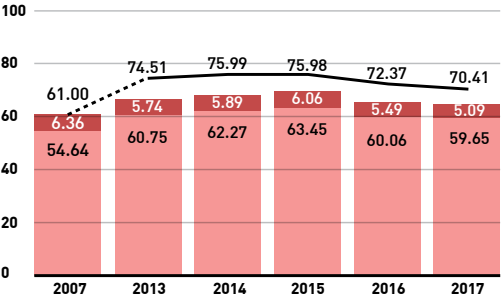
* Within KPMG's limited assurance scope (page 124)



Energy Consumption

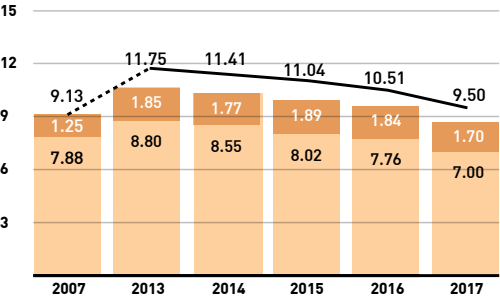
Cement

Petajoules



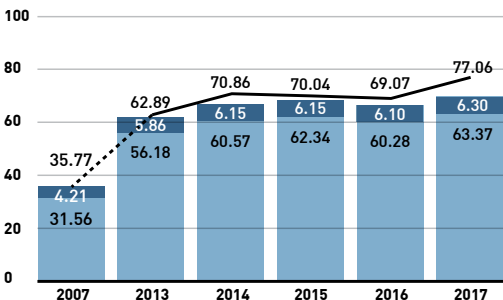
Building Materials

Petajoules



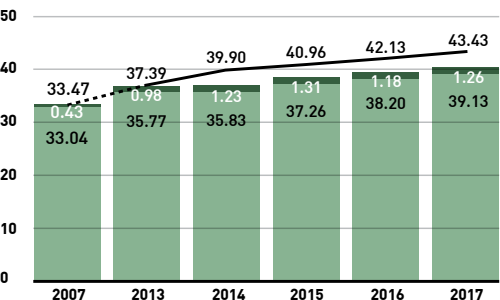
Chemicals

Petajoules



Packaging

Petajoules

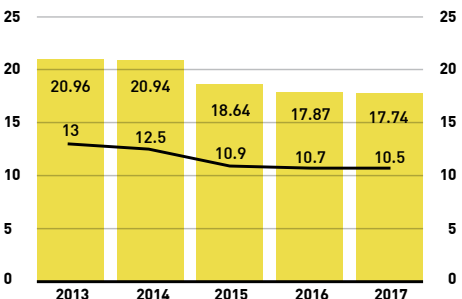


■ Thermal ■ Electrical — BAU

Alternative Energy

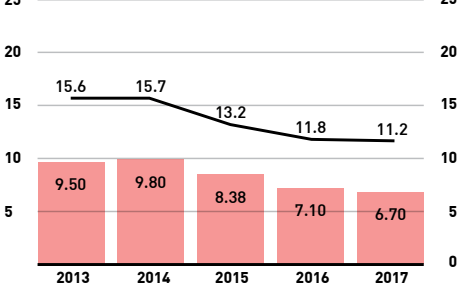
SCG Alternative Energy**

Petajoules



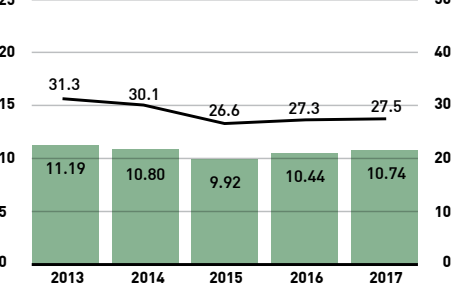
Cement

Petajoules



Packaging

Petajoules

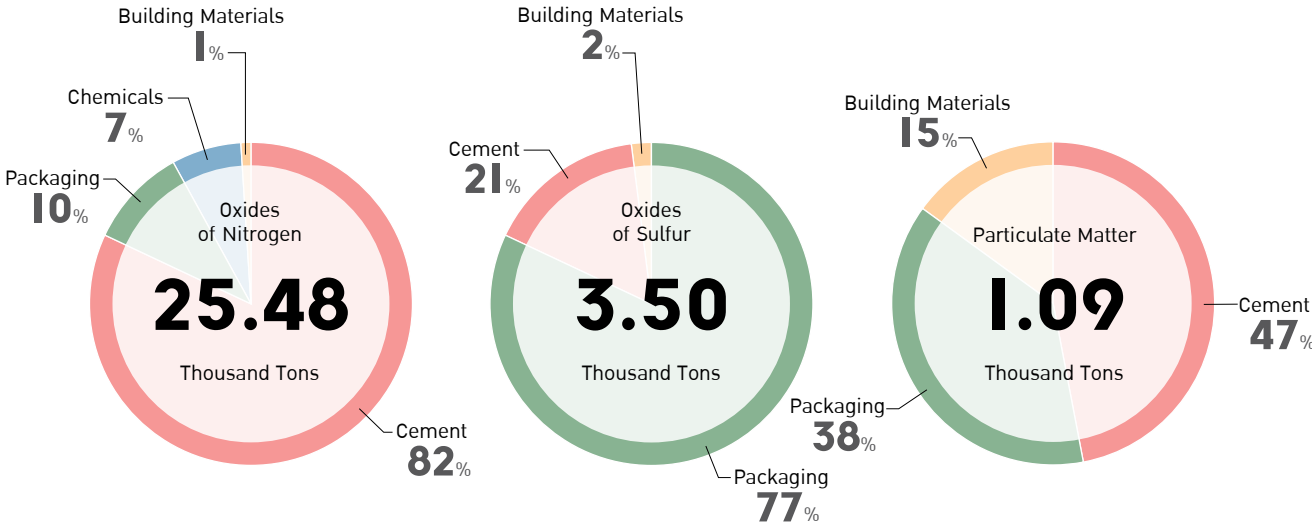


■ Amount — %

** Cement and Packaging are main utilizers of alternative energy

Performance Data	2013	2014	2015	2016	2017	G4
Oxides of Nitrogen (Thousand Tons)	23.95	23.94	25.45	22.16	25.48	EN15
Oxides of Sulfur (Thousand Tons)	5.26	3.25	3.34	2.84	3.50	EN16
Particulate Matter (Thousand Tons)	2.03	1.84	1.91	1.37	1.09	EN21

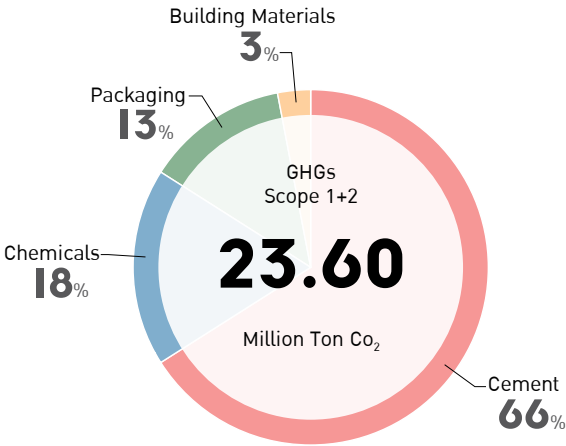
Emissions



Performance Data	2013	2014	2015	2016	2017	G4
GHG Scope 1 (Million Tons CO ₂)	21.34	22.12	22.51	21.51	21.15	*EN15
GHG Scope 2 (Million Tons CO ₂)	2.47	2.62	2.47	2.34	2.45	*EN16

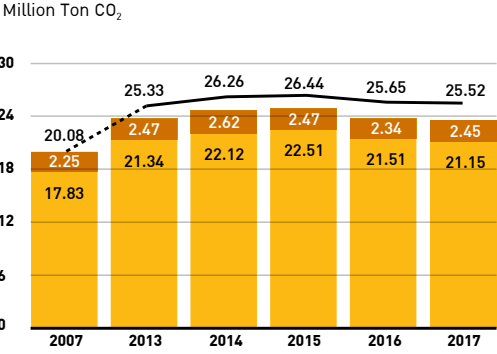
* Within KPMG's limited assurance scope (page 126)

GHGs Scope 1+2

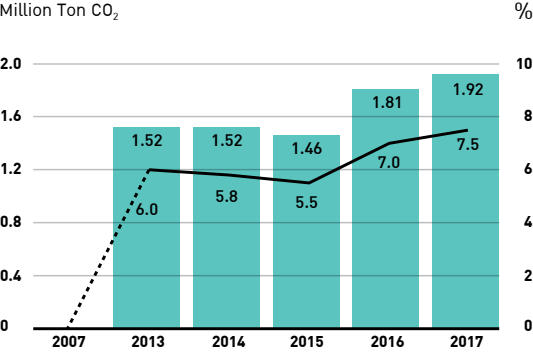


GHGs Scope 1+2

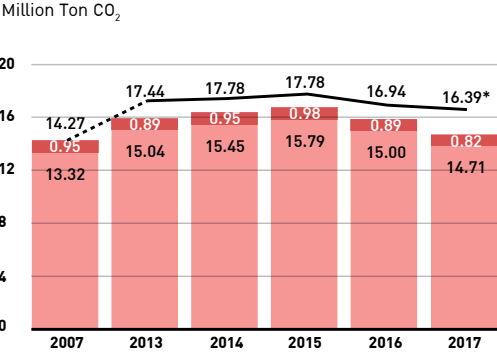
SCG Greenhouse Gas Emissions



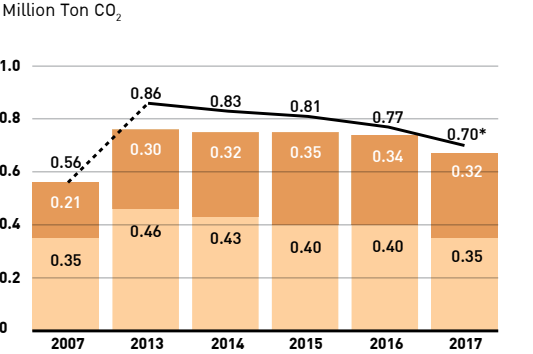
SCG Greenhouse Gas Reduction



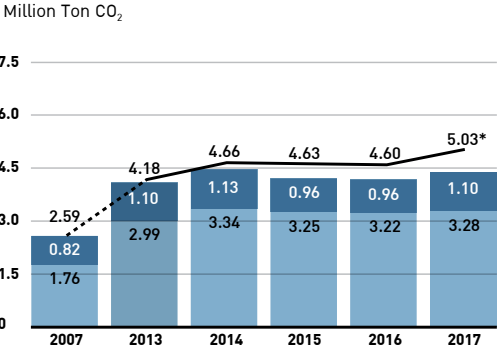
Cement



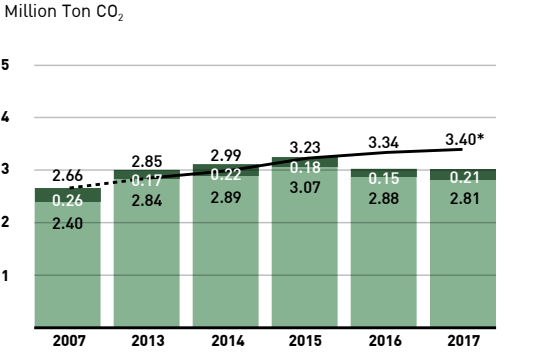
Building Materials



Chemicals



Packaging

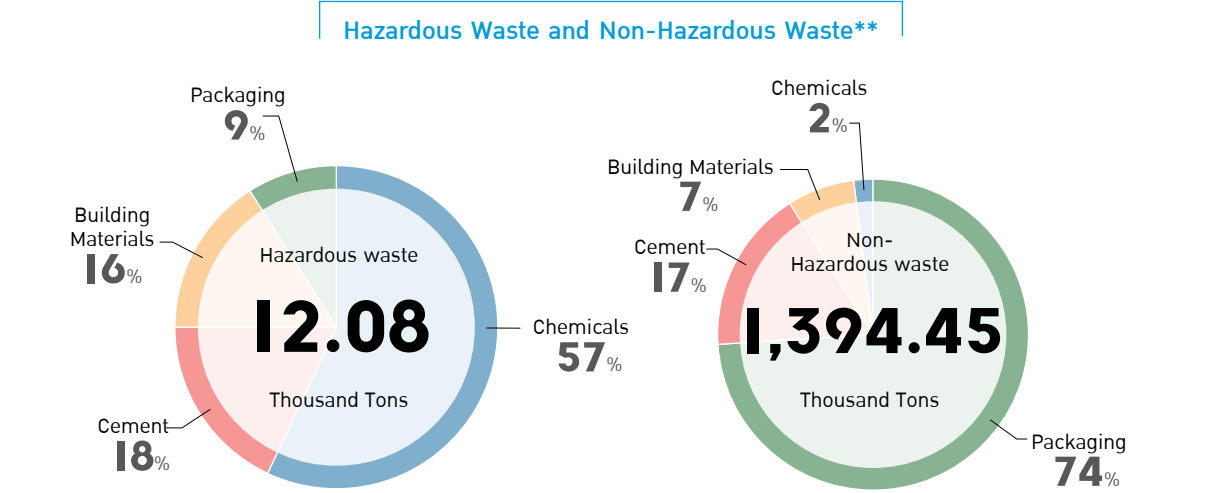


Amount Scope 1 Amount Scope 2 BAU or %

* Within KPMG's limited assurance scope (page 127)

Performance Data	2013	2014	2015	2016	2017	G4
Hazardous Waste (Thousand Tons)	19.60	15.29	15.66	21.26	12.08	*EN23
Non-Hazardous Waste (Thousand Tons)	1,130.67	1,209.46	1,373.36	1,348.19	1,394.45	*EN23

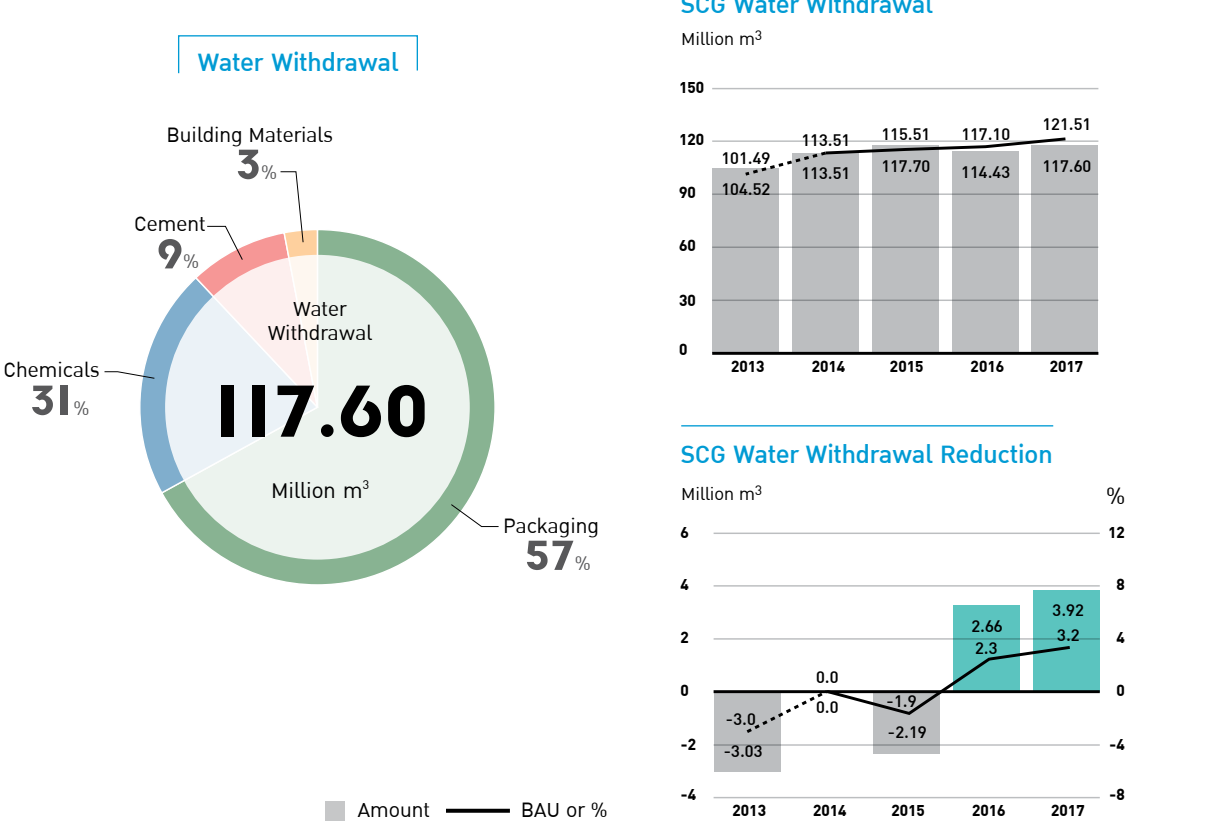
* Within KPMG's limited assurance scope (page 128)



** Amount and proportion of waste mangement are shown on pages 78-79.

Performance Data	2013	2014	2015	2016	2017	G4
Water Withdrawal (Million Cubic Meters)	104.52	113.51	117.70	114.43	117.60	*EN8
Proportion of Recycled Water (%)	6.98	7.20	7.93	5.40	6.01	*EN10
BOD (Thousand Tons)	0.49	0.49	0.42	0.46	0.39	EN22
COD (Thousand Tons)	6.75	6.73	6.53	6.75	6.32	EN22
TSS (Thousand Tons)	0.96	1.02	0.90	0.92	0.97	EN22

* Within KPMG's limited assurance scope (page 128)



*** Chemicals and Packaging are main contributors of recycled water

WBCSD Cement Sustainability Initiative (WBCSD CSI)

SCG Cement Company Limited has joined as one of the founder and core members of WBCSD Cement Sustainability Initiative (CSI) since 1999. It is the first company from Thailand to have expressed the commitment to balance business, environment and society. SCG Cement will be a model and coach for other cement companies in Thailand to pursue environmental and social activities, transparency and disclosure, and external audit.

Climate Change Protection

The company reports CO₂ emissions in line with the Cement CO₂ Protocol. In 2017, CO₂ scope 1 emissions was 14.68 million tons, which 651 kgCO₂/ton cementitious. It was increased from 2016 due to falling of cement demand in Thailand, and the need to find a market overseas for clinkers export. The CO₂ emissions scope 2 from the electricity bought was 0.79 million tons. The company continues its effort to increase energy efficiency by implementing initiatives such as the “Variable Speed of Lignite Mill and Raw Mill” projects which reducing exceed energy consumption. The company has maximized and explored new biomass types and refuse derived fuel (RDF) and waste to substitute fossil fuels use.

Pollution Reduction

The company has started reporting dust, oxide of nitrogen, (NOx) and sulfur dioxide (SO₂) emission with Continuous Emission Monitoring System (CEMs) in 2017, in combination with spot checks where CEMs could not process the data. In 2017, CEMs was able to report 86.56% of emission, and started to disclose data on Volatile Organic Compounds or Total Hydrocarbon (VOC/THC), Mercury, and Dioxin.

The company also improved upon efficient technology for pollution control. For example, the project to improve the Spray Tower that can increase efficiency dedusting of Electrostatic Precipitator (EP) and the project to change the main burner of KK3) to reduce Thermal NOx of Siam Cement (Kaeng Khoi).

Local Impact

The company enforces an environment-friendly quarry policy, applying the principle of biodiversity management to bring about Net Positive Impact on the ecosystem in all operation process; starting from the quarry design, resources use, biodiversity conservation and rehabilitation in line with international standards. We also seek to collaborate with a broad range of stakeholders in the authority sector, academic sector and surrounding communities. The company has implemented the Business & Biodiversity Check jointly with the Biodiversity-Based Economy Development Office (BEDO), BEDO Foundation (BEDO.FDN) and Global Nature Fund (GNF) to evaluate the overall impact of business on biodiversity along the whole supply chain. The pilot site was at Siam Cement Lampang in 2016, followed by Siam Cement Ta Luang in 2017. We hope to obtain ideas and suggestions from the evaluation to improve the way we do business vis-a-vis the ecosystem, thereby leading to sustainable development.

Health & Safety

In 2017, the cement business documented 6 fatalities, all of which related to outside transport accidents. The company has put in place additional preventive measures to reduce the probability and severity of transport-related accidents:

- Expanding the areas where parking on road shoulders is strictly prohibited, from 19,634 kilometers in 2016 to over 90,000 kilometers currently, nationwide. If GPS trackers intercept signs that a truck was parked in these no-parking areas, the control center shall alert the driver and request to move the vehicle.
- Expanding the network to track parking on road shoulders behavior to more than 10 contractors for more efficient and faster tracking.
- Replacing the taillight of trucks with LED for more brightness and clarity of emergency lights so that road users can see more clearly.
- Scaling up harmonize the safety management and standard from Thailand to the ASEAN operations in Cambodia, Lao PDR, Myanmar, Vietnam and Indonesia.

WBCSD CSI Operating Results of Cement Business

Performance Data	Unit	2013	2014	2015	2016	2017
Climate Protection (1, 3)						
Number of facilities adopting WBCSD Cement CO ₂ Protocol	number of factory	6	6	6	6	6
Absolute CO ₂ emissions - gross	%	100	100	100	100	100
Absolute CO ₂ emissions- net	million tons of CO ₂	15.21	15.62	16.04	15.24	14.92
Specific CO ₂ emissions - gross	million tons of CO ₂	15.08	15.45	15.79	15.00	14.68
Specific CO ₂ emissions - gross	kgCO ₂ /ton Cementitious	630	636	653	651	662
Specific CO ₂ emissions - net	kgCO ₂ /ton Cementitious	625	629	643	641	651
Use of Fuels and Raw Materials (3)						
Heat consumption	MJ/ton clinker	3,326	3,292	3,317	3,319	3,372
Alternative fossil fuel	% by heat	2.8	3.6	5.0	5.0	5.0
Biomass	% by heat	12.8	12.2	8.3	6.9	6.1
Alternative raw materials	% by weight	1.09	2.78	2.79	2.83	2.73
Clinker factor (Cementitious)	%	74.4	75.5	76.7	76.0	75.6
Emission Reduction (2, 3, 6)						
Clinker produced with monitoring of Dust, NO _x , SO ₂ , VOC/THC, Heavy Metal, PCDD/F (KPI 1)	%	-	99.23	99.23	99.17	99.17 ⁷
Clinker produced using CEMs of Dust, NO _x and SO ₂ emissions (KPI 2)	%	-	-	-	-	86.56 ⁷
Dust emissions (KPI 3)	ton	982	971	925	603	498 ⁷
Specific dust emissions (KPI 3)	g/ton clinker	54	52	49	34	29 ⁷
NO _x emissions (KPI 3)	ton	18,845	18,872	20,222	16,919	21,015 ⁷
Specific NO _x emissions (KPI 3)	g/ton clinker	1,033	1,005	1,064	941	1,205 ⁷
SO ₂ emissions (KPI 3)	ton	534	355	239	158	717 ⁷
Specific SO ₂ emissions (KPI 3)	g/ton clinker	29	19	13	9	41 ⁷
Clinker produced with monitoring of Dust, NO _x , SO ₂ (KPI 4)	%	100	100	100	100	100 ⁷
VOC/THC emissions (KPI 3)	ton	514	825	694	654	801
Specific VOC/THC (KPI 3)	g/ton clinker	28	44	37	37	46
Mercury emissions (KPI 3)	kg	23.45	22.56	16.51	14.95	14.53
Specific Mercury (KPI 3)	mg/ton clinker	1.29	1.21	0.87	0.84	0.84
Clinker produced with monitoring of VOC/THC and Mercury (KPI 4)	%	99.23	99.23	99.23	99.17	99.17
Dioxin emissions (PCDD/F) (KPI 3)	mg	22	3,840	2,035	1,048	237
Specific Dioxin (PCDD/F) (KPI 3)	ng/ton clinker	1.38	206.07	107.84	63.96	18.64
Clinker produced with monitoring of Dioxin (PCDD/F) (KPI 4)	%	87.00	99.23	99.23	91.08	72.96
Local impact						
Quarries with rehabilitation plans in place	number of site	4	4	4	4	4
	%	100	100	100	100	100
Quarries with community engagement plans in place	%	100	100	100	100	100
Quarries with high value where biodiversity management plans are actively implemented	number of site	4	4	4	4	4
	%	100	100	100	100	100
Water						
Total water withdrawal	million cubic meter	-	11	13	10	10
Specific water withdrawal	litre/ton cementitious	-	511	545	442	448
Health and Safety						
Number of fatalities						
- Directly employed	case	0	0	0	0	0
- Indirectly employed	case	2	1 ⁴	6 ⁴	1 ⁴	2 ⁴
- Third party	case	0	4 ⁴	2 ⁴	4 ⁴	4 ⁴
Fatality rate (Directly employed)	case per 10,000 directly employed	0	0	0	0	0
Number of lost time injuries						
- Directly employed	case	2	1	0	1 ³	1 ³
- Indirectly employed	case	4	2	5 ³	2 ³	1 ³
Lost time injury frequency rate (Directly employed)	case per million man-hour	0.38	0.18	0	0.19	0.06

Remarks

1. The collection and reporting of GHGs data is accordance with WBCSD CSI, Cement CO₂ Protocol Version 3.0 base on company’s own control.
2. The collection and reporting of each emission data (KPI 1, KPI 2, KPI 3, KPI 4) is in accordance with WBCSD CSI, The Guidelines for Emissions Monitoring and Reporting in the Cement Industry Version 2.0
3. Cement plants in Thailand
4. Cement Transportation Accident Data
5. Included accident data from cement transportation in Thailand and Cambodia
6. Dust, NO_x, SO₂ collection and reporting by Continous Emission Monitoring system (CEMs) in 2016
7. Within KPMG’s limited assurance scope (page 154-155)

About this report

SCG has published the sustainability report every year since 2001 by presenting the performance in 3 core business units namely, SCG Cement-Building Materials, SCG Chemicals and SCG Packaging. For economic and human resources data, the reporting scope cover the performance of subsidiaries, joint ventures, associates and other companies in line with the SCG Annual Report 2017. For environmental and safety data, only operating sites in Thailand were included using the combined criteria of equity share of 50% and over and controlled associates. Data from associates and joint ventures will be included on a voluntary basis (please see page 136-139 for the list of companies). Exception is for safety data of cement business, overseas cement plants were included according to WBCSD-CSI requirement.

This report have been improved in the presentation of Energy Consumption and Water Withdrawal data from SCG business activities on page 124-125 and 128-129 for a greater clarity to stakeholders. We have retrospectively presented 5-year data compared with 2007 and 2014, which is the Business as Usual (BAU) base year.

Reporting Scope

The reporting period for the information in this report is from 1 January 2017 to 31 December 2017. This 2017 sustainability report and its data were prepared in accordance with GRI-G4: Comprehensive reporting guideline. The information in this report disclosed a Communication on Progress (CoP) for the Advanced Level of United Nations Global Compact (UNCG) as shown on page 148-151 and operating results of cement business according to WBCSD-CSI as shown on page 130-131.

Reporting Assurance

Financial data was derived from financial management system similar to those presented in SCG Annual Report 2017 and is verified by certified accounting firm. To assure the integrity and the transparency of environmental and safety data in this report, SCG has requested an external party to verify and assess the selected data against GRI-G4 criteria (see details on page 152-155).

Reporting Principles on Environmental and Safety Data

Environmental and safety data from all business units were included in the report except for overseas operations, newly acquired companies (less than 3 years for new establishment and less than 4 years for M&A) and companies outside of SCG management control. Exclusivity of the data is noted in “Subsidiaries Included in Sustainability Report 2017” on page 136-139.

The selection of information included in this report is based on what is determined by SCG’s management to be responsible, relevant and of value for its stakeholders when measuring sustainability performance.

Environment

The environmental data cover those activities that, based on an overall environmental assessment and determined by SCG management, could have a significant impact on the environment. Sites with production process are included while sites with activities considered not to have a significant impact are not included, for examples; sales offices, R&D laboratories, services and holding companies.

The environmental data is based on data sources from accounting evidence, meter reading,

data from production system and estimation with ground rules.

Energy

Total energy consumption includes thermal energy and electricity used in the companies/plants areas.

Alternative energy is a part of thermal energy and defined as biomass, industrial or rejected wastes, e.g. used tyres, used oil, RDF and black liquor.

Calculation method of energy consumption is based on:

fuel weight or steam volume* x heating value of each fuel type**

* estimated from volume purchased or stockpile

** provided by laboratory test or suppliers

Greenhouse Gas Emissions (GHGs)

GHGs data in this report represent an account of SCG’s GHG emissions from the operation of based on WRI/WBCSD GHG Emissions Protocol. When choosing the inventory boundary, we considered a number of factors as followings;

1. Operational boundary

1.1 Direct GHG emissions (Scope 1) : GHG emissions occur from sources owned by SCG, for example emissions from combustion of coal or natural gas in incinerators, boilers, furnaces, vehicles, etc. In addition, we include GHG emissions occur from chemical production process such as calcinations in cement plant and lime kilns. On the other hand, emissions from the combustion of biomass, alternative fuels, water treatment process and landfill are excluded.

1.2 Indirect GHG emissions (Scope 2) : GHG emissions occur from the generation of energy purchased by SCG, such as electricity, steam and hot air.

2. Inventory:

2.1 Direct GHG emission calculation (Scope 1)

- From combustion
- It will be calculated based on quantities

of fuel consumption (weight or volume) such as fuel oil and natural gas x emission factors which was referred to Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) emission factors. If there is no Thai emission factor, Intergovernmental Panel on Climate Change 2006 (IPCC) emission factors will be used.

- It will be calculated based on fuel consumption (based on heating factor) such as coal x heating value x emission factor which was referred to TGO. If there is no Thai emission factor, Intergovernmental Panel on Climate Change 2006 (IPCC) emission factors will be used.

- It will be calculated from carbon mass balance from fuel consumption.

- From raw materials reaction in stoichiometry e.g. limestone and lime mud is estimated and calculated using mass balance.

- For cement business, refer to WBCSD-CSI.

2.2 Indirect GHG emissions (Scope 2) will be calculated from purchased electricity, steam or hot air consumption using emission factors from supplier.

3. Reporting on GHG emissions: The type of GHG emissions to be reported includes CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ converted to the universal unit of measurement by Global Warming Potential (GWP) as CO₂ equivalent. Referred GWP factors are defined by IPCC. For NF₃, it will be reported in the future.

Air Emission

Air emissions are the quantity of air pollution (for example, NO_x, SO₂, Particulate Matter) deriving from combustions and other components during the production process. This depends on the production process of each operation in which chemical substance is produced. It is based on a result and measurement as stipulated by laws. The measurement of air emissions is at the stacks during the operation, according to US EPA Method or equivalent standard.

Reporting of air emission will be calculated

based on concentration and hot gas ratio from spot check, multiplied by working hours. Spot check is made by laboratories which is certified and registered to the Department of Industrial Works.

In addition, SCG Chemicals and cement business measure air emissions from stack using Continuous Emission Monitoring Systems (CEMs). Cement business refers to WBCSD-CSI (see details on page 131).

Water

Water management (water withdrawal, water discharge, water treatment and water recycling) is considered in order to assess efficiency and any risks that may have when SCG withdraws water from nature.

Water withdrawal is the quantity of fresh water taken from external sources for use in any activities of SCG. The quantity of water includes water used in production process, offices, maintenance and utilities and is obtained from accounting evidences or meter reading. Sources of water are divided into surface water, ground water and tap water.

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

Effluent Water Quality is the quality of water discharged to external sources such as BOC, COD and TSS. The quality of water will be tested using standardized measurement.

Industrial Waste

Waste Management is considered in order to assess the efficiency of production process, improvement of product quality and a decrease of production cost. SCG has established 'SCG Waste Reporting Guideline' in March 2010 by SCG Waste Management Committee.

The quantity of waste from production process is reported and any waste which can be recycled in the production process (Work in process, WIP) is excluded.

Type of industrial wastes is classified by

the Notification of Ministry of Industry on Industrial Waste Disposal 2005. It can be divided into 2 categories, Hazardous Waste and Non-Hazardous Waste. Each category of waste is treated as recycle, disposal or landfill.

All waste data is measured as generated and managed volumes, by reading weighting scale. Estimation according to academic measurement is also used if weighting scale is not available.

Efficiency Indices/Specific Data

Efficiency indexes or specific data is calculated from environmental data divided by unit of production.

Tons production data used in the efficiency indices is measured based on data from production system. Estimation will be used if it is applicable.

Since 2016, SCG have improved the presentation of Environmental Performance data for a greater clarity. By comparing with the base year of 2007 which is the Business as Usual (BAU) on the topic of Greenhouse Gas Emissions (GHGs).

For cement business, tons production of clinker will be used for air emission and heat consumption (referring to WBCSD-CSI) efficiency indexes while other efficiency indexes, cementitious tons will be used. Regarding Energy Efficiency Index, GHG Emissions and Water withdrawal indices, we apply cementitious tons of production to calculate. Since 2016 Sustainability Report, cement business retroactively adjusted the reported cementitious data to incorporate other raw materials used in the cementitious production, including Pulverized Fuel Ash (PFA), limestone used in the cement production and limestone used in mortar mix.

Safety

Data on number of employees and contractors

Safety data includes information from three work streams: SCG employees, contracted

employees and contractors with the following definitions;

1. Employee - a full time worker according to SCG lifetime employment contract.

Employees are categorized into 3 levels: operational, supervisor, and management.

- Operational level is a front line worker who spends most of their time operating machines using their technical skills.

- Supervisor level is a front line manager who is responsible for daily management or having a control over subordinates.

- Management level is a top manager who responsible for addressing business strategies or policies. They delegate and control supervisor level employees who implement policy and daily jobs.

2. Contracted employee - a full time worker employs on a yearly contracted basis.

All employees and contracted employees are covered in this report

3. Contractor is an individual who gets consent from SCG to perform any job on SCG behalf but not an SCG's employee. Contractor is divided into 3 groups as follows:-

- Routine contractor is a contractor who performs an assigned job regularly or on a day-to-day basis under SCG's working procedures.

- Non-routine contractor is a contractor who performs any specific job using their own working procedures.

- Transport Contractor is a contractor engaged in transportation of raw materials or products under SCG's management (both with and without SCG Brand Logo) and those without SCG's management but having SCG Brand logo on their transportation vehicles.

All contractors are included in the data except for non-routine contractor where cases will be recorded but man-hours are excluded. Transportation contractors under SCG Logistics Management Co., Ltd., the data will be reported and shown in number of kilometer transportation.

Third party who does not fit any description above is not covered in this report.

Calculation of Working Hour

1. Data from clock-in system, HR database, accounting unit or relevant administrative unit.

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 average man-hours.

Number of man hours (man - hours)

= Number of Employees/ Contractors x Number of working days x Number of normal working hours (per day) + Number of Over Time (only operational employees and contractors)

Recording of Safety Data

SCG records data on safety at work, divided into 3 categories

1. Number of fatality; death resulting from work-related accident where the victim is passed away suddenly or thereafter due to such accident.

2. Incident Frequency Rate; number of cases per 200,000 man-hours.

3. Lost Time Injury Frequency Rate; number of lost time cases per 200,000 man-hours.

Lost Time Injury (LTI) is a work-related injury causing the absence of one or more working days (or shifts). This includes any work-related injury or illness which prevents that person from doing any work the day after the accident.

The electronic file of this report and the previous can be downloaded from SCG website
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Tel : 0-2586-1264 Fax : 0-2586-2836
E-mail: info@scg.com
and website : www.scg.com

Subsidiaries Included
in Sustainability Report 2017*

Business/Company		Production	Environment												Waste	Safety
			Energy		Air				Water							
			Thermal	Electricity	Dust	SO _x	NO _x	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS			
SCG																
1	The Siam Cement Public Company Limited															
SCG Cement-Building Materials																
Subsidiaries																
1	SCG Cement-Building Materials Co., Ltd.															✓
2	SCG Cement Co., Ltd.															✓
3	The Concrete Products and Aggregate Co., Ltd.		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓	✓
4	The Siam Cement (Kaeng Khoi) Co., Ltd.		✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
5	The Siam Cement (Ta Luang) Co., Ltd. (Ta Luang/Khao Wong)		✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
6	The Siam Cement (Thung Song) Co., Ltd.		✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
7	The Siam Cement (Lampang) Co., Ltd.		✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
8	Siam Mortar Co., Ltd.		✓	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓
9	The Siam White Cement Co., Ltd.		✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
10	The Siam Refractory Industry Co., Ltd.		✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
11	Cementhai Energy Conservation Co., Ltd.		Data included in The Siam Cement (Ta Luang) Co., Ltd., The Siam Cement (Kaeng Khoi) Co., Ltd., The Siam Cement (Thung Song) Co., Ltd. and The Siam Cement (Lampang) Co., Ltd.													✓
12	ECO Plant Services Co., Ltd.		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓
13	Siam Research and Innovation Co., Ltd.		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓
14	SCI Eco Services Co., Ltd.		✓	NR	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓
15	Q Mix Supply Co., Ltd.															
16	Silathai Sanguan (2540) Co., Ltd.															
17	Green Conservation Solution Co., Ltd.															
18	Silasanon Co.,Ltd															
19	SCG Building Materials Co., Ltd.															✓
20	The Siam Fibre-Cement Co., Ltd. (Saraburi/Ta Luang/Thung Song/Nongkae)		✓	✓	✓	✓	NR	✓	✓	✓	NR	NR	NR	NR	✓	✓
21	The Fibre-Cement Products (Lampang) Co., Ltd.		✓	✓	✓	✓	NR	✓	✓	✓	NR	NR	NR	NR	✓	✓
22	Tip Fibre-Cement Co., Ltd.															
23	SCG Landscape Co., Ltd. (Khonkaen/Thung Song/Ladkrabang/Lamphun/Sriracha/Nongkae)		✓	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓
24	Siam Fiberglass Co., Ltd.		✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
25	Cementhai Gypsum Co., Ltd.															
26	Cementhai Ceramics Co., Ltd.															
27	Thai Ceramic Co., Ltd.		✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
28	Gemago Co., Ltd.															
29	SCG Distribution Co., Ltd.															

Business/Company		Production	Environment												Safety
			Energy		Air				Water					Waste	
			Thermal	Electricity	Dust	SO _x	NO _x	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS		
30	The Siam Ceramic Group Industries Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
31	Cementhai Home Services Co., Ltd.														✓
32	SCG Trading Co., Ltd.														✓
33	SCG Logistics Management Co., Ltd.														✓
34	SCG Trading Services Co., Ltd.														
35	SCG Sourcing Co., Ltd.														
36	SCG Experience Co., Ltd.														✓
37	SCG Skills Development Co., Ltd.														
38	The CPAC Roof Tile Co., Ltd. (Saraburi/ Nakorn Prathom/Chonburi/Nakorn Rajchasrima/ Lamphun/Khonkaen/Nakorn Sri Thammaraj)	✓	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓
39	Thai Ceramic Roof Tile Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
40	MRC Roofing Co., Ltd.														
41	The Siam Sanitary Fittings Co., Ltd. (Pathumthani/Nakorn Rajchasrima)	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
42	Sosuco and Group (2008) Co., Ltd.														
43	Saraburirat Co., Ltd.	✓	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓
44	Thai-German Ceramic Industry Public Company Limited	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
45	Siam Sanitary Ware Co., Ltd.														✓
46	Siam Sanitary Ware Industry Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
47	Siam Sanitary Ware Industry (Nongkae) Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
48	Quality Construction Products Public Company Limited	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
49	Q-Con Eastern Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
50	SCGT Automobile Co., Ltd.														
51	Panel World Co., Ltd.														
52	Sosuco Ceramic Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
53	SCG-Sekisui Sales Co., Ltd.														✓
54	SCG Yamato Express Co., Ltd.														
55	Jumbo Barges and Tugs Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Joint Ventures, Associates and Other Companies															
1	Sekisui-SCG Industry Co., Ltd.	✓	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓
2	Noritake SCG Plaster Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR	✓	✓
3	SCG Nichirei Logistics Co., Ltd.														
SCG Chemicals															
Subsidiaries															
1	SCG Chemicals Co., Ltd.														✓
2	Thai Polyethylene Co., Ltd.	✓	✓	✓	NR	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.														✓

Business/Company		Production	Environment												Safety
			Energy		Air				Water					Waste	
			Thermal	Electricity	Dust	SO _x	NO _x	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS		
7	RIL 1996 Co., Ltd.	NR	NR	✓	NR	NR	NR	✓	NR	NR	NR	NR	NR	✓	✓
8	Texplyre Co., Ltd.														
9	Vina SCG Chemicals Co., Ltd.														
10	Rayong Pipeline Co., Ltd.														✓
11	Thai Plastic and Chemicals Public Company Limited	✓	✓	✓	NR	NR	✓	✓	✓	✓	✓	✓	NR	✓	✓
12	TPC Paste Resin Co., Ltd.	✓	✓	✓	NR	NR	✓	✓	✓	NR	✓	✓	NR	✓	✓
13	The Nawaplastic Industries (Saraburi) Co., Ltd.	✓	✓	✓	NR	NR	NR	✓	✓	NR	✓	✓	NR	✓	✓
14	Nawa Plastic Industries Co., Ltd.	✓	✓	✓	NR	NR	NR	✓	✓	NR	✓	✓	NR	✓	✓
15	Nawa Intertech Co., Ltd.	NR	NR	✓	NR	NR	NR	✓	NR	NR	NR	NR	NR	✓	✓
16	Total Plant Service Co., Ltd.														
17	SCG ICO Polymers Co., Ltd.	✓	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓
18	Map Ta Phut Tank Terminal Co., Ltd.	NR	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓
19	Map Ta Phut Olefins Co., Ltd.	✓	✓	✓	NR	NR	✓	✓	✓	✓	✓	✓	NR	✓	✓
20	Rayong Olefins Co., Ltd.	✓	✓	✓	NR	NR	✓	✓	✓	✓	✓	✓	NR	✓	✓
21	Siam Stabilizers and Chemicals Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓
22	Flowlab & Service Co., Ltd.														
23	SMH Co., Ltd.														
Joint Ventures, Associates and Other Companies															
1	Siam Mitsui PTA Co., Ltd.	✓	✓	✓	NR	NR	✓	✓	✓	✓	✓	✓	NR	✓	✓
2	Rayong Terminal Co., Ltd.	NR	✓	✓	NR	NR	NR	✓	✓	NR	NR	NR	NR	✓	✓
3	Thai MMA Co., Ltd.	✓	✓	✓	NR	NR	✓	✓	✓	NR	✓	✓	NR	✓	✓
4	Grand Siam Composites Co., Ltd.	✓	✓	✓	NR	NR	NR	✓	✓	NR	✓	✓	NR	✓	✓
5	Thai MFC Co., Ltd.	✓	✓	✓	NR	NR	✓	✓	✓	✓	✓	✓	NR	✓	✓
6	Thai PET Resin Co., Ltd.	✓	✓	✓	NR	NR	✓	✓	✓	NR	✓	✓	NR	✓	✓
7	Siam Tohcello Co., Ltd.	✓	✓	✓	NR	NR	NR	✓	✓	NR	✓	✓	✓	✓	✓
8	Bangkok Synthetics Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
SCG Packaging															
Subsidiaries															
1	SCG Packaging Public Company Limited														✓
2	Thai Paper Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓
3	Thai Union Paper Public Company Limited														
4	Siam Kraft Industry Co., Ltd. (Kanchanaburi/Ratchaburi)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	The Siam Forestry Co., Ltd.	✓	NR	NR	NR	NR	✓	NR	NR	NR	NR	NR	NR	NR	✓
6	Panas Nimit Co., Ltd.														NR
7	Thai Panason Co., Ltd.														NR
8	Thai Panadorn Co., Ltd.														NR
9	Thai Panaram Co., Ltd.														NR
10	Suanpa Rungsaris Co., Ltd.														NR
11	Siam Panawes Co., Ltd.														NR
12	Thai Panaboon Co., Ltd.														NR
13	Thai Wanabhum Co., Ltd.														NR

Business/Company		Production	Environment												Safety
			Energy		Air				Water					Waste	
			Thermal	Electricity	Dust	SO _x	NO _x	GHG	Water Withdrawal	Recycled Water	BOD	COD	TSS		
14	Phoenix Pulp & Paper Public Company Limited	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓
15	Phoenix Utilities Co., Ltd.														
16	SCGP Excellence Traning Center Co., Ltd.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
17	SCG Paper Energy Co., Ltd.														
18	Thai Cane Paper Public Company Limited (Kanchanaburi/Prachinburi)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19	Thai Containers Group Co., Ltd. (Navanakorn/Pathumthani/Samutprakarn/ Ratchaburi/Songkhla/Chonburi/Prachinburi/ Saraburi/Kamphaeng Phet)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20	Thai Containers Khonkaen Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓
21	Thai Containers Rayong Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓
22	Invenique Co., Ltd.														
23	TC Flexible Packaging Co., Ltd.														
24	Dyna Packs Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25	Orient Containers Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	✓	✓
26	Tawana Container Co., Ltd.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
27	D-In-Pack Co., Ltd.	✓	✓	✓	NR	NR	NR	✓	✓	✓	NR	NR	NR	✓	✓
28	Prepack Thailand Co., Ltd. (Samutsakorn/Samut Songkhram/Rayong)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
29	Precision Print Co., Ltd														
30	Conimex Co., Ltd.														
31	SCGP Solutions Co., Ltd.														
32	SCGP-T Solutions Co., Ltd.														
Associates															
1	Siam Nippon Industry Paper Co., Ltd.	✓	✓	✓	NR	NR	NR	✓	✓	✓	NR	NR	NR	✓	✓
Other															
Subsidiaries															
1	Cementhai Holding Co., Ltd.														
2	Cementhai Property (2001) Public Company Limited														
3	Property Value Plus Co., Ltd.														
4	SCG Accounting Services Co., Ltd.														
5	SCG Legal Counsel Limited														
6	CTO Management Co., Ltd.														
7	Siam Innovation Product and Solution Co., Ltd.														
8	SCG Learning Excellence Co., Ltd.														
9	Bangsue Industry Co.,Ltd.														
10	Add Ventures Capital Co.,Ltd.														
11	Add Ventures Capital International Co.,Ltd.														
12	Siam GNE Solar Energy Co., Ltd.														

* Economic performance covers all significant subsidiaries, joint ventures, associates and other companies according to Annual Report 2017
NR = Non Relevance

Office/Investment/Sales/Service where the collection of environmental and safety 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

GRI Content Index

G4 Indicator	Description	AR	Page	SR	Omission/ Note	External Assurance
GENERAL STANDARD DISCLOSURES						
STRATEGY AND ANALYSIS						
G4-1	Statement from the most senior decision-maker of the organization	2-3		4-5		
G4-2	Description of key impacts, risks, and opportunities	123-128		30-31		
ORGANIZATIONAL PROFILE						
G4-3	Name of the organization	289		16		
G4-4	Primary brands, products, and services	9-19, 22-41		8-11		
G4-5	Location of the organization's headquarter	289		135		
G4-6	Number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report	7				
G4-7	Nature of ownership and legal form	289				
G4-8	Markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries)	4-19		8-11		
G4-9	Scale of the organization	4, 22-41		136-139		
G4-10	Total number of employees by type	75		120-121		
G4-11	Percentage of total employees covered by collective bargaining agreements				The information will be disclosed in www.scg.com	
G4-12	Describe the organization's supply chain			25		
G4-13	Significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain	6-7		132-135		
G4-14	Explanation of whether and how the precautionary approach or principle is addressed by the organization	123-128		30-31		
G4-15	List externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or which it endorses			34-35, 130-131, 148-151		
G4-16	Membership in associations			8-11, 34-35, 130-131, 148-151		
IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES						
G4-17	List all entities included in the organization's consolidated financial statements or equivalent documents	22-41		136-139		
G4-18	Process for defining report boundaries and content	22-41		132-135		
G4-19	Material aspects included in the report			28-29		
G4-20	Descriptions of material aspect boundaries within the organization			28-29		
G4-21	Descriptions of material aspect boundaries outside the organization			28-29		
G4-22	Explanation of the effect of any restatements			28-29	note: no restatement in 2017.	
G4-23	Significant changes from previous reporting periods in the Scope and Aspect Boundaries			28-29	note: no significant changes from previous report.	
STAKEHOLDER ENGAGEMENT						
G4-24	List of stakeholder groups engaged by the organization	82-90		32-35		
G4-25	Basis for identification and selection of stakeholders with whom to engage	82-90		32-35		
G4-26	Approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group	82-90		32-35		
G4-27	Key stakeholder topics and concerns and organization response	82-90		32-35		

AR = Annual Report
SR = Sustainability Report

G4 Indicator	Description	AR	Page	SR	Omission/ Note	External Assurance
REPORT PROFILE						
G4-28	Reporting period for information provided	289		132-135		✓
G4-29	Date of most recent report			132-135		✓
G4-30	Reporting cycle	289		132-135		✓
G4-31	Contact point for questions regarding the report or its contents	289		135		
G4-32	"In accordance" option, GRI Index and report assurance			132-135, 154-155		✓ *
G4-33	Policy regarding report assurance	140-141		154-155		
GOVERNANCE						
G4-34	Governance structure of the organization	45		18-21		
G4-35	Process for delegating authority for sustainability topics from the board to senior executives and other employees	46-48		18-25		
G4-36	High-level accountability for sustainability topics	46-48, 78-110		18-25		
G4-37	Processes for consultation between stakeholders and the board on sustainability topics	89-91		32-35		
G4-38	Composition of the board and its committees	45-48, 98-101		14-16, 18-20		
G4-39	Indicate if Chair of highest governance body is also an executive officer	2-3				
G4-40	Nomination and selection processes for the board and its committees	102-104				
G4-41	Processes for the highest governance body to ensure conflicts of interest are avoided and managed	82				
G4-42	Board and executives' roles in the organization's mission statements, strategies, policies, and goals related to sustainability impacts	91-95				
G4-43	Board knowledge of sustainability topics	95-96				
G4-44	Board performance with respect to governance of sustainability topics	95				
G4-45	Board role in the identification and management of sustainability impacts, risks, and opportunities	123-128		14-16		
G4-46	Board role in reviewing risk management processes for sustainability topics	123-128		14-16		
G4-47	Frequency of the board's review of sustainability impacts, risks, and opportunities	123-124		30-31		
G4-48	Highest committee or position that formally reviews and approves the organization's sustainability report	123		18-21		
G4-49	Process for communicating critical concerns to the board	124		14-19, 30-31		
G4-50	Nature and total number of critical concerns that were communicated to the board	123-128		30-31		
G4-51	Remuneration policies for the board and senior executives	70-72				
G4-52	Process for determining remuneration	100				
G4-53	Stakeholders' views on remuneration	70-72				
G4-54	Ratio of the annual total compensation for the organization's highest-paid individual to the median annual total compensation for all employees	70-72				
G4-55	Ratio of percentage increase in annual total compensation for the organization's highest-paid individual to the median percentage increase in annual total compensation for all employees	70-72				
ETHICS AND INTEGRITY						
G4-56	Code of conduct	78-110		14-16, 38-43, 94-101		
G4-57	Helplines or advice lines for employees	108		28-29, 38-41, 94-101		
G4-58	Mechanisms for reporting concerns about unethical or unlawful behavior	108		38-43		

AR = Annual Report
SR = Sustainability Report
* Only Selected Subject Matter : Report Assurance

G4 Indicator	Description	AR	Page	SR	Omission/ Note	External Assurance
SPECIFIC STANDARD DISCLOSURES						
CATEGORY: ECONOMIC						
ASPECT: ECONOMIC PERFORMANCE						
G4-DMA	Generic Disclosures on Management Approach	89-91				
G4-EC1	Direct economic value generated and distributed	4-7		120		
G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	125		64-69		
G4-EC3	Coverage of the organization's defined benefit plan obligations	44, 72				
G4-EC4	Financial assistance received from government	228		120		
ASPECT: MARKET PRESENCE						
G4-DMA	Generic Disclosures on Management Approach	89-91				
G4-EC5	Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	126-127		121		
G4-EC6	Proportion of senior management hired from the local community at significant locations of operation	126-127		121		
ASPECT: INDIRECT ECONOMIC IMPACTS						
G4-DMA	Generic Disclosures on Management Approach	89-91		56-63		
G4-EC7	Development and impact of infrastructure investments and services supported	73-75		84-87		
G4-EC8	Significant indirect economic impacts, including the extent of impacts			108-117		
ASPECT: PROCUREMENT PRACTICES						
G4-DMA	Generic Disclosures on Management Approach	87		28-29, 94-95		
G4-EC9	Proportion of spending on local suppliers at significant locations of operation			96-101		
CATEGORY: ENVIRONMENTAL						
ASPECT: MATERIALS						
G4-DMA	Generic Disclosures on Management Approach			28-29, 76-77		
G4-EN1	Materials used by weight or volume			8-11, 123		
G4-EN2	Percentage of materials used that are recycled input materials			78-81, 123		
ASPECT: ENERGY						
G4-DMA	Generic Disclosures on Management Approach			28-29, 64-65, 133		
G4-EN3	Energy consumption within the organization			66-69, 124-125, 130-131		✓
G4-EN4	Energy consumption outside of the organization				Data are collected for logistics but they are not publicly reported.	
G4-EN5	Energy intensity			124-125, 131		
G4-EN6	Reduction of energy consumption			64-65		
G4-EN7	Reductions in energy requirements of products and services			87		
ASPECT: WATER						
G4-DMA	Generic Disclosures on Management Approach			28-29, 70-71, 134		
G4-EN8	Total water withdrawal by source			72, 128-129	Note: Rainwater is counted as part of surface water	✓
G4-EN9	Water sources significantly affected by withdrawal of water			70-72	Note: no water sources significantly affected by withdrawal of water.	
G4-EN10	Percentage and total volume of water recycled and reused			73, 129		✓
ASPECT: BIODIVERSITY						
G4-DMA	Generic Disclosures on Management Approach			28-29, 102-103, 130		

AR = Annual Report
SR = Sustainability Report

G4 Indicator	Description	AR	Page	SR	Omission/ Note	External Assurance
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas			102-107, 130-131		
G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas			102-107		
G4-EN13	Habitats protected or restored			102-107, 130-131		
G4-EN14	Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk				Note: no IUCN Red List species and national conservation list species with habitats in areas affected by operations.	
ASPECT: EMISSIONS						
G4-DMA	Generic Disclosures on Management Approach			28-29, 64-65, 130, 133		
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)			126-127, 131		✓
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)			126-127		✓
G4-EN17	Other indirect greenhouse gas (GHG) emissions (Scope 3)					
G4-EN18	Greenhouse gas (GHG) emissions intensity			126-127, 131		
G4-EN19	Reduction of greenhouse gas (GHG) emissions			126-127		
G4-EN20	Emissions of ozone-depleting substances (ODS)				non-materiality	
G4-EN21	NO _x , SO _x , and other significant air emissions			126-127, 131	assurance for cement business	✓
ASPECT: EFFLUENTS AND WASTE						
G4-DMA	Generic Disclosures on Management Approach			28-29, 76-77, 134		
G4-EN22	Total water discharge by quality and destination			78-81, 128		
G4-EN23	Total weight of waste by type and disposal method			78-81, 128	note: Non-process waste is not included in calculotior of total hazardous and non-hazardous waste.	✓
G4-EN24	Total number and volume of significant spills			122		
G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally				note: no waste under the terms of the Basel Convention Annex I, II, III, and VIII.	
G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats signifcantly affected by the organization's discharges of water and runoff				note: no plant located near by identity, size, protected status, and biodiversity value of water bodies.	
ASPECT: PRODUCTS AND SERVICES						
G4-DMA	Generic Disclosures on Management Approach			28-29, 82-83		
G4-EN27	Extent of impact mitigation of environmental impacts of products and services			84-87		
G4-EN28	Percentage of products sold and their packaging materials that are reclaimed by category			84-87		
ASPECT: COMPLIANCE						
G4-DMA	Generic Disclosures on Management Approach			28-29, 38-39		
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations				note: no fines for non-compliance with environmental laws and regulations in 2017.	
ASPECT: TRANSPORT						
G4-DMA	Generic Disclosures on Management Approach			28-29, 44-46, 94-95		
G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce			46, 48-50		
ASPECT: OVERALL						
G4-DMA	Generic Disclosures on Management Approach			28-29		
G4-EN31	Total environmental protection expenditures and investments by type			120		

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SR = Sustainability Report

G4 Indicator	Description	AR	Page	SR	Omission/ Note	External Assurance
ASPECT: SUPPLIER ENVIRONMENTAL ASSESSMENT						
G4-DMA	Generic Disclosures on Management Approach			28-29, 94-95		
G4-EN32	Percentage of new suppliers that were screened using environmental criteria			96-98		
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken				note: no significant environmental impacts in the supply chain in 2017.	
ASPECT: ENVIRONMENTAL GRIEVANCE MECHANISMS						
G4-DMA	Generic Disclosures on Management Approach			28-29, 32-35, 108-109		
G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms				note: no grievances about environmental impacts filed or addressed.	
CATEGORY: SOCIAL						
SUB-CATEGORY: LABOR PRACTICES AND DECENT WORK						
ASPECT: EMPLOYMENT						
G4-DMA	Generic Disclosures on Management Approach	84-86		28-29, 52-53, 56-67		
G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender and region	75		120-122		
G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	84-86		58-59		
G4-LA3	Return to work and retention rates after parental leave, by gender			121		
ASPECT: LABOR/MANAGEMENT RELATIONS						
G4-DMA	Generic Disclosures on Management Approach	84-86		28-29, 52-53, 56-57		
G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements			54-55		
ASPECT: OCCUPATIONAL HEALTH AND SAFETY						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 44-45, 94-95, 130		
G4-LA5	Percentage of total workforce represented informal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs			44-45		
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender			46-51, 121, 131		✓
G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	84-85		46-51		
G4-LA8	Health and safety topics covered in formal agreements with trade unions	84-85		44-45		
ASPECT: TRAINING AND EDUCATION						
G4-DMA	Generic Disclosures on Management Approach	84-86		28-29, 60-61		
G4-LA9	Average hours of training per year per employee by gender, and by employee category			62-63		
G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	84-86		62-63		
G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category			62-63		
ASPECT: DIVERSITY AND EQUAL OPPORTUNITY						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 52-53		
G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity			121		

AR = Annual Report
SR = Sustainability Report

G4 Indicator	Description	AR	Page	SR	Omission/ Note	External Assurance
ASPECT: EQUAL REMUNERATION FOR WOMEN AND MEN						
G4-DMA	Generic Disclosures on Management Approach	84-86		28-29, 52-53		
G4-LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation			121		
ASPECT: SUPPLIER ASSESSMENT FOR LABOR PRACTICES						
G4-DMA	Generic Disclosures on Management Approach	87		28-29, 94-95		
G4-LA14	Percentage of new suppliers that were screened using labor practices criteria			96-101		
G4-LA15	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken				note: no significant actual and potential impacts on labor practices in the supply chain.	
ASPECT: LABOR PRACTICES GRIEVANCE MECHANISMS						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 38-39		
G4-LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms				note: no grievances about labor practices filed or addressed in 2017.	
SUB-CATEGORY: HUMAN RIGHTS						
ASPECT: INVESTMENT						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 52-53		
G4-HR1	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening				note: all agreements are in compliance with SCG Code of Conduct.	
G4-HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained			56-63		
ASPECT: NON-DISCRIMINATION						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 52-53		
G4-HR3	Total number of incidents of discrimination and corrective actions taken				note: no incidents of discrimination in 2017.	
ASPECT: FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 52-53		
G4-HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights			56-63		
ASPECT: CHILD LABOR						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 52-53		
G4-HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor			96-97		
ASPECT: FORCED OR COMPULSORY LABOR						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 52-53		
G4-HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor			96-97	note: no operations and suppliers identified as having significant risk for incidents of forced or compulsory labor according to SCG Code of Conduct.	
ASPECT: SECURITY PRACTICES						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 52-53		
G4-HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations				note: 100% were trained according to contract agreement.	
ASPECT: INDIGENOUS RIGHTS						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 52-53		

AR = Annual Report
SR = Sustainability Report

G4 Indicator	Description	AR	Page	SR	Omission/ Note	External Assurance
G4-HR8	Total number of incidents of violations involving rights of indigenous peoples and actions taken				note: no violation involving rights of indigenous peoples in 2017.	
ASPECT: ASSESSMENT						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 52-53		
G4-HR9	Total number and percentage of operations that have been subject to human rights reviews or impact assessments				note: 100% reviewed by Code of Conduct.	
ASPECT: SUPPLIER HUMAN RIGHTS ASSESSMENT						
G4-DMA	Generic Disclosures on Management Approach	86-87		28-29, 94-95		
G4-HR10	Percentage of new suppliers that were screened using human rights criteria			96-101		
G4-HR11	Significant actual and potential negative human rights impacts in the supply chain and actions taken				note: there was no negative human rights impacts in supply chain.	
ASPECT: HUMAN RIGHTS GRIEVANCE MECHANISMS						
G4-DMA	Generic Disclosures on Management Approach	84-87		28-29, 94-95		
G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms			43		
SUB-CATEGORY: SOCIETY						
ASPECT: LOCAL COMMUNITIES						
G4-DMA	Generic Disclosures on Management Approach	87-88		28-29, 108-109		
G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs			110-117		
G4-SO2	Operations with significant actual and potential negative impacts on local communities			110-117	note: no operations with significant actual or potential negative impacts on local communities in 2017.	
ASPECT: ANTI-CORRUPTION						
G4-DMA	Generic Disclosures on Management Approach	108		14-15, 43		
G4-SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	141-143		40-43		
G4-SO4	Communication and training on anti-corruption policies and procedures	108-109		40-43		
G4-SO5	Confirmed incidents of corruption and actions taken				note: no incidents of corruption in 2017.	
ASPECT: PUBLIC POLICY						
G4-DMA	Generic Disclosures on Management Approach				Non Relevance	
G4-SO6	Total value of political contributions by country and recipient/beneficiary				Non Relevance	
ASPECT: ANTI-COMPETITIVE BEHAVIOR						
G4-DMA	Generic Disclosures on Management Approach				Non Relevance	
G4-SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes				Non Relevance	
ASPECT: COMPLIANCE						
G4-DMA	Generic Disclosures on Management Approach	78-110		28-29, 38-39		
G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations				note: no significant fines in 2017.	
ASPECT: SUPPLIER ASSESSMENT FOR IMPACTS ON SOCIETY						
G4-DMA	Generic Disclosures on Management Approach	87		28-29, 44-45, 94-95		
G4-SO9	Percentage of new suppliers that were screened using criteria for impacts on society			96-101		
G4-SO10	Significant actual and potential negative impacts on society in the supply chain and actions taken				note: no significant negative impacts on society in the supply chain found in 2017.	

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G4 Indicator	Description	AR	Page	SR	Omission/ Note	External Assurance
ASPECT: GRIEVANCE MECHANISMS FOR IMPACTS ON SOCIETY						
G4-DMA	Generic Disclosures on Management Approach	88-89		28-29, 108-109		
G4-SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms			110-117		
SUB-CATEGORY: PRODUCT RESPONSIBILITY						
ASPECT: CUSTOMER HEALTH AND SAFETY						
G4-DMA	Generic Disclosures on Management Approach	86-87		28-29, 82-83		
G4-PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement				note: 100% of significant products.	
G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes				note: incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products in 2017.	
ASPECT: PRODUCT AND SERVICE LABELING						
G4-DMA	Generic Disclosures on Management Approach	86-87		28-29, 82-83		
G4-PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements				note: all significant product and service categories are assessed regarding health and safety impact.	
G4-PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes				note: no incidents of non-compliance in 2017.	
G4-PR5	Results of surveys measuring customer satisfaction			90-93		
ASPECT: MARKETING COMMUNICATIONS						
G4-DMA	Generic Disclosures on Management Approach			28-29, 88-89		
G4-PR6	Sale of banned or disputed products				note: no banned or disputed products in SCG in 2017.	
G4-PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes			82-83	note: no incidents of non-compliance in 2017.	
ASPECT: CUSTOMER PRIVACY						
G4-DMA	Generic Disclosures on Management Approach			28-29, 88-89		
G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data			90-93		
ASPECT: COMPLIANCE						
G4-DMA	Generic Disclosures on Management Approach			28-29, 82-83, 88-89		
G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services				note: no significant fines for non-compliance concerning the provision and use of products and services in 2017.	

United Nations Global Compact (UNGC)

Communication on Progress for the Advanced Level



Criteria for the GC Advanced Level	Action	Page
Strategy, Governance, and Engagement		
1. High-level sustainability in line with UNGC	<ul style="list-style-type: none"> • President & CEO Statement • Chairman of Sustainable Development Committee Statement • Business Philosophy and Vision • Sustainable Business Strategy 	4 5 12-13 22-23
2. Effective decision-making processes and systems of governance for corporate sustainability	<ul style="list-style-type: none"> • Corporate Governance • Corporate Governance Practice • Sustainable Management Structure • Sustainable Business Strategy 	14-17 38-43 18-21 24-25
3. Engagement with all key stakeholders	<ul style="list-style-type: none"> • Defined Stakeholder Engagement Policy and Guidelines, strategy and practices 	32-35
UN Goals and Issues		
4. Actions taken in support of broader UN goals and issues	<ul style="list-style-type: none"> • About SCG • Materiality • Corporate Governance Practice • Sustainable Business Strategy 	6-11 28-29 38-43 24-25
Human Rights Implementation		
5. Robust commitments, strategies or policies in the area of human rights	<ul style="list-style-type: none"> • Defined Human Rights Policy, strategy and practices aimed to be a role model in relation to human rights, actively supporting and promoting the business value chain • Human Rights related risk assessment • Respect to human diversity • Employee caring with equality and fairness to build employee engagement 	52-55 54-55 55 58-59
6. Effective management systems to integrate the human rights principles	<ul style="list-style-type: none"> • Health and safety for employees and contractors • Human Rights related risk assessment • Suppliers risk assessment 	44-51 54-55 94-99

Criteria for the GC Advanced Level	Action	Page
7. Monitoring and evaluation mechanisms of human rights performance	<ul style="list-style-type: none"> • Employee opinion survey and engagement • Safety Performance Assessment Program (SPAP) • Human Rights management approach • Contractor Safety Management (CSM) Program 	32-35, 43 48-51 52-55 94-99
8. Outcomes of human rights principles integration	<ul style="list-style-type: none"> • Human Rights related risks • Number of disabilities employees • Number of contractors certified for CSM Program • Social Performance 	30-31, 34-35 35 98 121
Labour Principles Implementation		
9. Appropriate commitments, strategies or policies in the area of labor	<ul style="list-style-type: none"> • Defined Health and Safety policy, target and strategy like Life Saving Rules, Visible Safety Leadership 	44-45
10. Effective management systems to integrate the labor principles	<ul style="list-style-type: none"> • Risk assessment approach and management • Health and Safety management approach like Life Saving Rules, Reducing Accidents Relating to Working with Machines • Improved contractor safety standard via Contractor Safety Management Program (CSM) • Employee caring and development 	30-31 46-51 94-99 56-63
11. Monitoring and evaluation mechanisms of labor performance	<ul style="list-style-type: none"> • Safety Performance Assessment Program (SPAP) • Contractor Safety Management (CSM) Program 	48-51 94-99
12. Outcomes of labor principles integration	<ul style="list-style-type: none"> • Health and safety performance • Employee caring and development performance • Summarised accident statistics and social indicators (commonly satisfaction) and WBCSD-CSI indicators • Social Performance 	46-51, 122 58-59, 62-63, 121 130-131 121

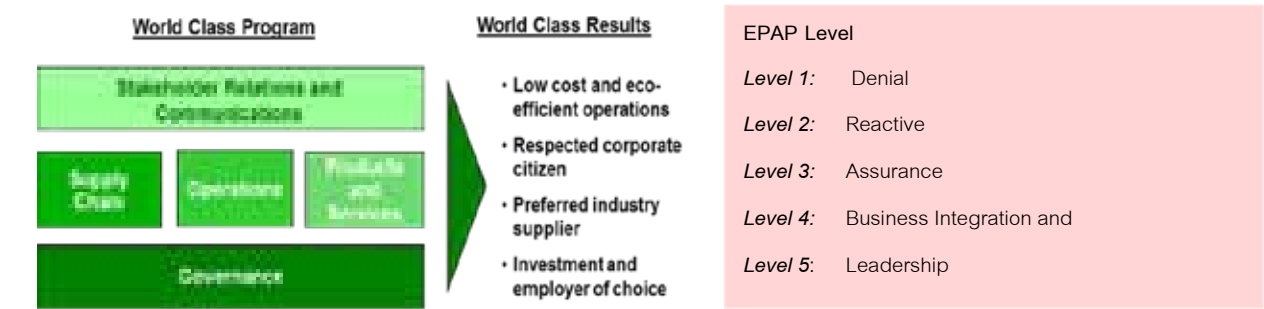
Criteria for the GC Advanced Level	Action	Page
Environmental Implementation		
13. Appropriate Commitments, strategies or policies in the area of environmental responsibility	• Risk assessment, defined environmental practices, and emerging risk management approach	30-31
	• Defined Energy and Climate Change policy aimed to reduce Green House Gas (GHG) emissions per production unit by 10% compared with 2007 within 2020	64-69
	• Defined Water Management policy aimed to reduce the water withdrawal per unit of production by 20% compared with 2014 within 2020	70-75
	• Defined Material Use and Waste Management policy aimed to reduce the volume of waste disposal per production unit by 20% compared with 2014 within 2020	76-81
	• Defined Biodiversity and Ecosystem policy, target and strategy	102-107
14. Effective management systems to integrate the environmental principles	• Defined Sustainable Management Structure and Sustainable Business Strategy	18-21, 24-25
	• Improved production process with international standards approved and environmental friendly through management approach such as Energy and Climate Change, Water Management, Material Use and Waste Management	64-81
	• Create sustainable value from environmentally friendly products and services (Microsurgical operating microscope drapes, Active AIRFlow™ System, Sustainable Packaging and SCG Green Building Solution)	82-87
15. Monitoring and evaluation mechanisms of environmental performance	• Suppliers governance and assessment and green procurement approach	94-101
	• Regulated practices and performance followed environment policy and strategy by committee	14-21
	• Progress of environment development plan	64-81
16. Outcomes of environmental principles integration	• Create sustainable value to suppliers and suppliers assessment	94-101
	• Environmental Performance Assessment Program (EPAP)	152-155
17. Outcomes of environmental principles integration	• Environmental performance	122-129
	• WBCSD-CSI Indicators	130-131

Criteria for the GC Advanced Level	Action	Page
Anti-Corruption Implementation		
17. Appropriate commitments, strategies or policies in the area of anti-corruption	• Business Philosophy and Vision	12-13
	• Anti-Corruption Policy and practices	14-17
	• Aimed to be role model for good corporate governance which have been recognized internationally	38-39
18. Effective management systems to integrate the anti-corruption principle	• Clearly defined authority of each levels of executives and corporate governance structure	14-17
	• Applied Proactive and Preventive System	42
	• Opened for employees and external parties to file complaints or misconducts	43
19. Monitoring and evaluation mechanisms anti-corruption performance	• Audit reporting system to Board of Directors via Audit Committee	14-17
	• Systems for assessing, auditing and build employee knowledge in regularly basis	42
20. Outcomes of anti-corruption principle integration	• No complaints against Anti-Corruption Policy found	43
Value Chain Implementation		
21. Implementation of the UNGC principles in the value chain	• Sustainable Business Strategy and SCG sustainable supply chain	24-25
	• Identified Value Chain Management approach on SCG Supplier Code of Conduct, Green Procurement, Contractor Safety Management (CSM) Program, sustainable products and services as well as customer relationship management	88-101
Transparency and Certification		
22. Information on the company's profile and business context and	• Our Core Business	9-11
23. Highest standards of transparency and disclosure	• Sustainability performance data 2013-2017	120-129
	• WBCSD-CSI Indicators	130-131
	• GRI Content Index	140-147
	• Pride of SCG	156-160
24. Independently certified by a credible third-party	• Assurance Statements	152-155

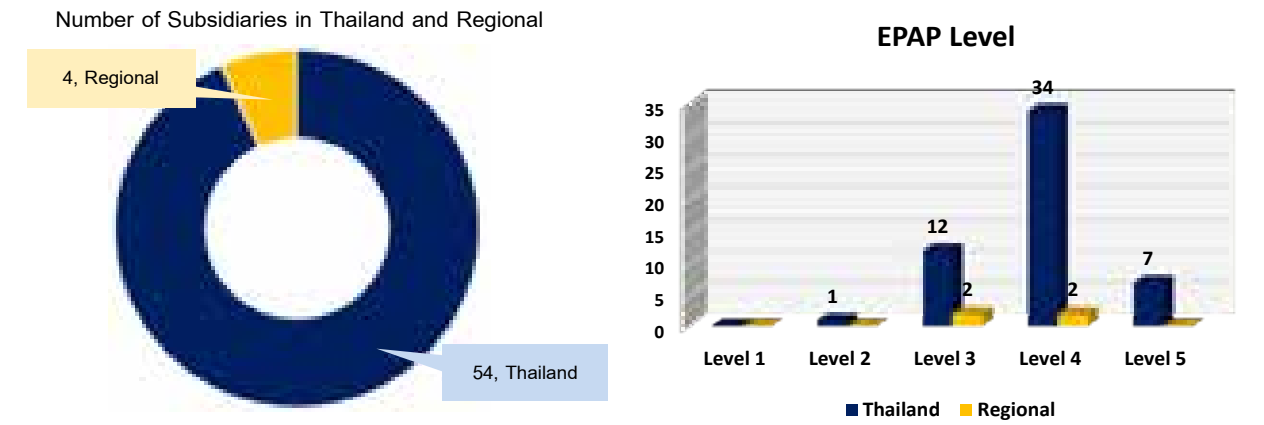
Assurance Statements

Environmental Performance Assurance Statement, 2017

SCG started implementing the Environmental Performance Assessment Program (EPAP) since 2001. Up to 2017, 58 subsidiaries in total have participated, which totals to 202 assessments conducted. The participating subsidiaries are those required by SCG criteria considering the business type, and activities with potential environmental impacts. Since 2013, the assessment criteria reference sustainable development framework, with relevance to the environment. This enables benefits to the assessed subsidiaries, drives for environmental performance improvement and ensuring the alignment with SCG's sustainable development policy. Notably, the scope of assessment comprises of 5 main elements: Governance, Supply Chain, Operations, Products and Services, and Stakeholder Relation and Communication. Each participating subsidiary is assessed every 3 years.



Assessment result from each company will be categorized into 5 levels, with considerations given to Management System, Compliance, Effectiveness, and Performance of the operations according to the assessment criteria.



Past assessment results demonstrate that, for the most parts, each subsidiary in SCG has continuous improvement in environmental management. Until presently, there are 58 companies eligible for the assessment, with 54 companies basing in Thailand, and 4 other companies internationally. Overall, 12% (7 companies) has their environmental performance at level 5, 62% (36 companies) at level 4, 24% (14 companies) at level 3, and 2% (1 company) at level 2.

2017 Assessment results covers 7 companies in total. The overall management in each aspect and issue, which received an emphasis from SCG, in order to ascertain achievement of sustainable business goals, are as follows.

Governance

Top management of each subsidiary is involved in defining sustainability strategy, targets, and sustainable development plans, in establishing the organization and functions responsible for monitoring and reporting of environmental performance to achieve the defined targets. There are also risk assessment process, control measures, and mitigation measures, to ensure effectively management of key risks. Furthermore, the Company also gives priority to enhancement of knowledge, sustainable development capacity for companies basing outside Thailand. This is to ensure that the performance is consistent and alignment in the same direction throughout the entire Company. However, some subsidiaries should review non-technical risks, which may generate environmental impacts, such as changes in raw materials and fuel in the production process, to name a few. Some subsidiaries should enhance their emergency preparedness and response plans to be more comprehensive, such as the case of coal or pet coke explosion in white cement production plant and in PVC production plan (international).

Supply Chain

There are risks management process and expansion of partnership opportunity with suppliers and contractors, in order to elevate environmental work of critical suppliers and contractors according to SCG's Greening the Supply Chain program. The program is implemented in subsidiaries operating internationally, by applying the mentioned process in the selection and contract management systematically. This is because the implementation may differ for each business and subsidiary. Therefore, some subsidiaries should integrate environmental issues in supplier and business partner management to increase the efficiency, such as the integration of selection criteria and contracts to be thorough and specific to environmental and social risks, as well as the development and establishment of performance evaluation of suppliers and contractors, to infer to effectiveness of environmental performance.

Operations

There is a process of environmental risk analysis, to establish a control measure of critical risks. Mostly, the operations are in compliance of the law, a minimum standard, whereas some subsidiaries establish control measures to be effective beyond the law. This was achieved via comparison of environmental management effectiveness at a World Class, to identify opportunity for implementation of best available technology, in order to reduce environmental impacts and community concerns. These comprise of an installation of enclosure ground flare for olefin production plant, collaboration between subsidiaries in transferring of process gas released from the system and subject to flaring, to another company for usage, and SALSA project, which transforms production's waste into useful raw materials, to name a few. However, most subsidiaries need to review and enhance the program to reduce energy consumption and GHG emission. As well as, a few subsidiaries should review and enhance maintenance program of equipment related to environmental impacts, to ensure that the mentioned equipment is routinely kept, such as CEMs.

Product and Service

Most subsidiaries obtained the certifying of the product and the organization (CFP & CFO) for carbon footprint labels, Life Cycle Analysis (LCA) is conducted to evaluate key impacts arise, in order to assess impacts from the operation and from the subsidiary. Furthermore, subsidiaries have expanded the environmental label certification, SCG eco value, to international companies. However, some subsidiaries should establish a guideline for the utilization of LCA's results, to facilitate the reduction of environmental impacts in the critical process or component of the products' life cycle, as well as creating business opportunities for these products, including data verification of impact assessment at an appropriate duration (such as every 3 years). Furthermore, the subsidiaries should consider promoting for a collection system of used product, to return it to production process. This would help decrease the Group's waste management burden and impacts.

Stakeholder Relation and Communication

Stakeholder identification and prioritization are thoroughly conducted, including establishing approach for collaboration with external parties, as well as surveying critical stakeholders' opinions for improvement in the subsidiary's sustainability operation. However, some subsidiaries should raise concerns collected from community satisfaction survey, in order to have a more effective engagement. Concerns comprise of the dust emitted from the chimneys, and disturbing odor from wastewater treatment system, as well as reviewing the guideline in grievance receiving and recording, ensuring it is multi-channels. This encourages systematic data analysis and modification. Furthermore, there should be verification of response measures towards community grievances, to ascertain that the responses are correct, suitable, and truly address community's concerns.

Plerngtape Chamikorn
Country Manager
ERM Siam Co., Ltd., 19 February 2018

ERM is a global provider of environmental, social and corporate responsibility consulting and assurance services. We have worked with over half of the world's 500 largest companies, in addition to numerous governments, international organizations and NGOs.

Independent limited assurance report

To the Sustainable Development Committee of The Siam Cement Public Company Limited ("SCC")

Conclusions

Based on the procedures performed, as described below, nothing has come to our attention that causes us to believe that the selected subject matter ("Subject Matter") identified below and included in the Sustainability Report 2017 (the "Report") for the year ended 31 December 2017, are not, in all material respects, prepared in compliance with the reporting criteria (the "Criteria").

Dear Representative:

We have been engaged by SCG and are responsible for providing a limited assurance conclusion in respect of the Subject Matters for the year ended 31 December 2017 to be included in the Report as identified below.

Our assurance engagement is conducted in accordance with the International Standard on Assurance Engagements (ISAE) 3000 *Assurance Engagements other than Audits or Reviews of Historical Financial Information* and ISAE 3410 *Assurance on Greenhouse Gas Statements*. These standards require the assurance team to possess the specific knowledge, skills and professional competencies needed to provide assurance on sustainability information, and that we plan and perform the engagement to obtain limited assurance on whether the Subject Matters are prepared, in all material respects, in compliance with the Criteria. We have complied with the requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants to ensure their independence. The firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have not been engaged to provide an assurance conclusion on any other information disclosed within the Report.

Subject Matters

Subject Matters comprised of the following data expressed numerically for the year ended 31 December 2017:

- a) Environmental dimension performance indicators
 - Total energy consumption (petajoules) on page 124
 - Alternative energy consumption (petajoules) on page 124
 - Greenhouse gas emission (scope 1) (million tons) on page 126
 - Greenhouse gas emission (scope 2) (million tons) on page 126
 - Greenhouse gas emission (scope 1 and scope 2) by core business unit, with comparison against base year 2007 "business as usual" emissions (million tons) on page 127
 - Hazardous waste (thousand tons) and disposal method (%) on pages 78 and 128
 - Non-hazardous waste (thousand tons) and disposal method (%) on pages 79 and 128
 - Water withdrawal (million cubic meters) on page 128
 - Proportion of recycled water (%) on page 128
- b) Social dimension performance indicators
 - Total Incident Rate (Employees and Contractors) (Case/200,000 Man-Hours) on page 122
 - Incident Rate (Lost Time Case) (Employees and Contractors) (Case/200,000 Man-Hours) on page 122
 - Number of Fatalities (Employees (male : female) and Contractors (male : female)) (Case) on page 122

- c) WBCSD-CSM Emissions Monitoring and Reporting key performance indicators
 - o % of clinker produced with monitoring of Dust, NO_x, SO_x, VOC/THC, heavy metals, PCDD/F (KPI 1) (%) on page 131
 - o % of clinker produced using CEMs of Dust, NO_x, SO_x (KPI 2) (%) on page 131
 - o Dust emission (KPI 3) (tons) on page 131
 - o Specific dust emission (KPI 3) (g/ton clinker) on page 131
 - o NO_x emission (KPI 3) (tons) on page 131
 - o Specific NO_x emission (KPI 3) (g/ton clinker) on page 131
 - o SO_x emission (KPI 3) (tons) on page 131
 - o Specific SO_x emission (KPI 3) (g/ton clinker) on page 131
 - o % of clinker produced with monitoring of Dust, NO_x, SO_x (KPI 4) (%) on page 131

Criteria

The Subject Matters were assessed according to the following criteria, where relevant, as specified by SCO in the section "About this report" on pages 132 to 135 of the Report:

- the Sustainability Reporting Guidelines version 4 Comprehensive issued by the Global Reporting Initiative ("GRI-G4 Comprehensive");
- the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard issued by the World Business Council for Sustainable Development and World Resources Institute ("WBCSD/WRI-GHG"); and
- the Cement Sustainability Initiative guidelines issued by the World Business Council for Sustainable Development ("WBCSD-CSI"), including WBCSD-CSI Guidelines for Emissions Monitoring and Reporting in the Cement Industry (updated March 2012, version 2.0).

Sustainable Development Committee's responsibilities

The Sustainable Development Committee of SOG is responsible for the preparation and presentation of the Subject Matters, specifically ensuring that in all material respects the Subject Matters are prepared and presented in accordance with the Criteria. This responsibility also includes the internal controls relevant to the preparation of the Report that is free from material misstatements whether due to fraud or error.

Limited coverage over Subject Matters

In forming our limited assurance conclusion over the Subject Matters, our procedures consisted of making enquiries and applying analytical and other evidence gathering procedures including:

- Interviews with senior management and relevant staff at corporate and operating sites;
- Inquiries about the design and implementation of the systems and methods used to collect and process the information reported, including the aggregation of source data into the Subject Matters;
- Assessing the appropriateness of management's review process;
- Visits to 4 sites, selected on the basis of risk analysis including the consideration of both quantitative and qualitative criteria;
- Agreeing the Subject Matters to relevant underlying sources on a sample basis to determine whether all the relevant information has been included in the Subject Matters and prepared in accordance with the Criteria.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement and consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance opinion.

Restriction of use of our report

Our report should not be regarded as suitable to be used or relied on by any party wishing to acquire rights against us other than SCG, for any purpose or in any other context. Any party other than SCG who obtains access to our report or a copy thereof and chooses to rely on our report (or any part thereof) will do so at its own risk. To the fullest extent permitted by law, we accept or assume no responsibility and deny any liability to any party other than SCG for our work, for this independent limited assurance report, or for the conclusions we have reached.

KPMG Phoonchai Audit Ltd.

KPMC Pharmaceutical India Ltd.

References

21 February 2010

PRIDE OF SCG 2017

SCG

- SET Sustainability Award 2017 for the 3rd consecutive year from the Stock Exchange of Thailand
 - Sustainability Awards of Honor
 - Thailand Sustainability Investment
- Best Company Performance Awards in the category of companies listed in the Stock Exchange of Thailand from the Stock Exchange of Thailand
- “Excellent” in Corporate Governance Report of Thai Listed Companies 2017 from Thai Institute of Directors
- Sustainability Report Awards 2017 in Excellence for the 4 consecutive year (Award of Sustainable Excellence) from Thai Listed Companies Association (CSR Club), The Securities and Exchange Commission and Thaipat Institute
- MAT Awards 2017 from Marketing Association of Thailand
 - Gold Award of Sustainable
 - The Siam Cement Public Company Limited

- IP Champion Awards 2017 from Department of Intellectual Property

Business Unit

- ASEAN Mineral Awards 2017 in Best Practice in Minerals Mining category from Association of Southeast Asian Nations
 - The Siam Cement (Kaeng Khoi) Co., Ltd.
- Thailand Coal Awards 2017 and ASEAN Coal Awards 2017 from The Department of Alternative Energy Development and Ministry of Energy
 - Siam Kraft Industry Co., Ltd., Ban Pong Plant
- TPM Excellence Awards winner 2016 from Japan Institute of Plant Maintenance
 - Advance Special Award for TMP Achievement
 - Thai Plastic and Chemicals Public Company Limited

- Special Award for TMP Achievement
 - Thai Cane Paper Co., Ltd. (Prachinburi Plant)
- Award for Excellence in Consistent TPM Commitment
 - Siam Cellulose Co., Ltd.
 - The Siam Cement (Thung song) Co., Ltd.
 - The Siam Fibre-Cement Co., Ltd. (Ta Luang)
 - The Siam Refractory Industry Co., Ltd.
 - The Siam Mortar Co., Ltd.
- Award for TPM Excellence
 - PT Styrimdo mono Indonesia

- The Prime Minister’s Industry Award 2017 for an Outstanding Achievement in Environmental Quality Conservation, Ministry of Industry
 - The Siam Cement (Lampang) Co., Ltd.

- Prime Minister Road Safety Awards 2017 Outstanding Organization for Road Safety from Thai Health Promotion Foundation
 - SCG Chemicals Co., Ltd.

- Excellent Award on Energy Creative, Thailand Energy Award 2017, Breakthrough Performance in OPC Grinding
 - The Siam Cement (Ta Luang) Co., Ltd.

- Excellent Award on Energy Conservative and Alternative Energy Development, Thailand Energy Award 2017
 - The Siam Cement (Ta Luang) Co., Ltd.
 - Thai MMA Co., Ltd.

- Eco Factory Award from The Federation of Thai Industries
 - Thai Containers Group Co., Ltd., Samut Prakan Plant
 - Thai Cane Paper Public Company Limited, Prachinburi Plant

- MAT Award 2017 from Marketing Association of Thailand
 - Gold Award of Real Estate & Construction
 - SCG Cement - Building Materials Co., Ltd.



SET Sustainability Award 2017 for the 3rd consecutive year from the Stock Exchange of Thailand



Best Company Performance Awards



Sustainability Report Awards 2017 in Excellence for the 4 consecutive year (Award of Sustainable Excellence)



MAT Awards 2017 from Marketing Association of Thailand

- Silver Award of Real Estate & Construction
 - SCG Cement Building Materials Co., Ltd.
- Silver Award of Sustainable
 - The Siam Forestry Co., Ltd.
- The Outstanding Workplace Award for Safety, Occupational Health and Environment from Department of Labour Protection and Welfare, Ministry of Labour
 - Thai MMA Co., Ltd. (the 17th consecutive year)
 - Siam Mitsui PTA Co., Ltd. (the 15th consecutive year)
 - Rayong Olefins Co., Ltd. (the 15th consecutive year)
 - Thai Polyethylene Co., Ltd. (the 13th consecutive year)
 - Siam Kraft Industry Co., Ltd., Ban Pong Plant (the 12th consecutive year)
 - Thai Containers Group Co., Ltd., Pathumthani Plant (the 12th consecutive year)
 - Thai Containers Group Co., Ltd., Ratchaburi Plant (the 12th consecutive year)
 - Thai Plastic and Chemicals Public Company Limited, Rayong plant (the 11th consecutive year),
 - Thai Containers Group Co., Ltd., Saraburi Plant (the 9th consecutive year),
 - Thai Containers Group Co., Ltd., Navanakorn Plant (the 8th consecutive year)
 - Thai Containers Group Co., Ltd., Songkhla Plant (the 8th consecutive year)
 - Thai Containers Group Co., Ltd., Samut Prakan Plant (the 7th consecutive year)
 - Thai MFC Co., Ltd. (the 7th consecutive year)
 - Grand Siam Composite Co., Ltd. (the 6th consecutive year)
 - Map Ta Put Olefins Co., Ltd. (the 5th consecutive year)
 - Thai PET Resin Co., Ltd. (the 5th consecutive year)
 - Nawaplastic Industries Co., Ltd., Saraburi Plant (the 5th consecutive year)
 - Thai Containers Group Co., Ltd., Prachinburi Plant (the 5th consecutive year)
 - Thai Plastic and Chemicals Public Company Limited, Samut Prakan Plant (the 4th consecutive year)
 - Thai Containers Group Co., Ltd., Wangsala Plant (the 4th consecutive year)
 - Nawa Intertech Co., Ltd. (the 4th consecutive year)
 - Thai Containers Group Co., Ltd., Chonburi Plant (the 3rd consecutive year)
 - Thai Containers KhonKaen Co. Ltd. (the 3rd consecutive year)
 - Siam Tohcello Co., Ltd. (the 2nd consecutive year)
 - Thai Cane Paper Public Company Limited, Kanchanaburi Plant (the 2th consecutive year)
 - Thai Cane Paper Public Company Limited, Prachinburi Plant (the 2th consecutive year)
 - Thai Containers Rayong Co., Ltd. (the 2nd consecutive year)

- Tawana Container Co., Ltd. (the 2nd consecutive year)
- The Siam Sanitary Fitting Co., Ltd., Nakhon Ratchasima Plant (the 2nd consecutive year)
- Occupational Health and Environment Awards in 2017 from Department of Labour Protection and Welfare, Ministry of Labour
 - The Outstanding Safety Committee Award
 - Thai Containers Group Co., Ltd., Navanakorn Plant
 - The Outstanding Supervisor Award
 - Thai Containers Group Co., Ltd., Ratchaburi Plant
- The Outstanding Organization Award - Labor Relations and Welfare in 2017 from Department of Labour Protection and Welfare, Ministry of Labour
 - Thai Containers Group Co., Ltd., Navanakorn Plant
 - Thai Containers Group Co., Ltd., Ratchaburi Plant
 - Thai Containers Group Co., Ltd., Pathumthani Plant
 - Phoenix Pulp and Paper Public Company Limited
- Excellence Award of EIA monitoring Awards 2016 from Plantfrom Ministry of Natural Resources and Environment
 - The Siam Cement (Lampang) Co., Ltd. – Limestone and shale mine sector
 - The Siam Cement (Thung Song) Co.,Ltd. – Limestone and shale mine sector
 - The Siam Cement (Lampang) Co., Ltd. – Industrial sector
 - The Siam Cement (Thung Song) Co.,Ltd. – Industrial sector
- CSR-DIW Continuous Awards from Ministry of Industry
 - Siam Kraft Industry Co., Ltd., Ban Pong Plant
 - Siam Kraft Industry Co., Ltd., Wangsala Plant
 - Thai Paper Co., Ltd., Ban Pong Plant
 - The Concrete Products and Aggregate Co.,Ltd.
- Green Industry Level 5 Award (Green network) from Ministry of Industry
 - Siam Kraft Industry Co., Ltd., Wangsala Plant
 - Thai Paper Co., Ltd., Wangsala Plant
 - Rayong Olefins Co., Ltd.



IP Champion Awards 2017 from
Department of Intellectual Property



The Prime Minister's Industry Award
2017



Prime Minister Road Safety Awards
2017



Eco Factory Award



Excellence Award of EIA monitoring
Awards 2016



Green Industry Level 5 Award

- Green Industry Level 4 Award (Green system) from Ministry of Industry
 - Thai Containers Group Co., Ltd., Samut Prakan Plant
 - Thai Cane Paper Public Company Limited, Prachinburi Plant
 - Thai Cane Paper Public Company Limited, Kanchanaburi Plant
 - The Siam White Cement Co., Ltd.
- Thailand PES Award 2017 from Biodiversity-Base Economy Development Office (Public Organization)
 - The Siam Cement (Lampang) Co., Ltd.
- RIL Industrial Estate received certificate of participation as a pilot industrial estate to certify standard at Eco-Excellence level from Industrial Estate Authority of Thailand (IEAT)
- Thailand Voluntary Emission Reduction Program (T-VER) from Thailand Greenhouse Gas Management Organization (Public Organization) of Ministry of Natural Resources and Environment
 - Electricity Generation by Rooftop Solar Power System
 - RIL 1996 Co., Ltd.
- Thailand Voluntary Emission Trading Scheme (T-VETS) Thailand Greenhouse Gas Management Organization (Public Organization) of Ministry of Natural Resources
 - Rayong Olefins Co., Ltd.
- Carbon Footprint Reduction : CFR from Thailand Greenhouse Gas Management Organization (Public Organization)
 - Nawaplastics Industries Co., Ltd.
 - Thai MMA Co., Ltd.
 - SCG Cement-Building Materials Co., Ltd
 - The Siam White Cement Co., Ltd.
 - The Concrete Products and Aggregate Co., Ltd.
- Green Label (Portland Cement type 1) from Thailand Environment Institute
 - SCG Cement-Building Materials Co., Ltd.
- Green Mining Award 2017 from Ministry of Industry
 - The Siam Cement (Ta Luang) Co., Ltd.
 - The Siam Cement (Kaeng Khoi) Co., Ltd



RIL Industrial Estate received certificate of participation as a pilot industrial estate



Carbon Footprint Reduction: CFR)



Green Mining Award 2017



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