

SUSTAINABILITY REPORT 2012

SCG



ASEAN SUSTAINABLE BUSINESS LEADER





HRH Princess Maha Chakri Sirindhorn's Trophy for Thailand Corporate Excellence Awards 2011 for the 11th consecutive year from Thailand Management Association (TMA) and Sasin Graduate Institute of Business Administration of Chulalongkorn University (2001-2011)



SET Award of Honor in Best Corporate Social Responsibility for the 5th consecutive year from The Stock Exchange of Thailand (2007-2011)



Sector Leader in Building Materials & Fixtures from Dow Jones Sustainability Indexes (DJSI) by Robeco Sustainable Asset Management (RobecoSAM) for the 2nd consecutive year (2011-2012) and ranked highest level in Gold Class for the 5th consecutive year (2008-2012)



LEED Platinum in Energy and Environmental Design for Existing Buildings: Operations & Maintenance (LEED EB:OM) from the U.S. Green Building Council (USGBC), the 1st certified building in ASEAN

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About SCG



Since established in 1913 following a royal decree of His Majesty King Rama VI to produce cement, the main building material for infrastructure projects that greatly contributed to the progress of the country during that period, SCG has been conducting business according to the guidelines of sustainable development and surpassing the 100th anniversary while learning, adjusting, and developing itself continuously. Through struggles and challenges domestically and globally, SCG has been diligently inventing products, services, businesses, and work environments while establishing balance between economic, social, and environment in addition to conforming to good corporate governance. SCG's continuous determination and dedication are our commitment beyond our longstanding tradition to serve as a sustainable business leader in ASEAN.

Following our determination to sustainable development, SCG has been honored with the Sector Leader in the Building Materials & Fixtures for a second consecutive year (2011-2012) from Dow Jones Sustainability Indexes (DJSI), a global sustainable best practice ranking index for global leading companies by evaluating aspects of economic, social, and environment. SCG is the only company in ASEAN to be honored a Sector Leader rank and also is classified in the Gold Class, the highest class, for the fifth consecutive year since 2008.

The Group has diversified into five core businesses which include SCG Chemicals, SCG Paper, SCG Cement, SCG Building Materials, and SCG Distribution.



SCG Chemicals manufactures and supplies a complete range of chemicals products encompassing upstream chemicals including olefins; intermediate chemicals including vinyl chloride monomer, styrene monomer, PTA, propylene oxide, and methyl methacrylate (MMA); downstream chemicals including all 5 types of plastic resins; polyethylene, polypropylene, polyvinylchloride, polystyrene and PET resin.

SCG Chemicals has entered into a joint venture agreement with a number of global chemical companies including Dow Chemical of USA, Mitsui Chemicals Inc. and Mitsubishi Rayon, Japan, PT Chandra Asri Petrochemical Tbk (CAP) in Indonesia. And together with Vietnamese, and Qatari partners, SCG Chemicals is undergoing feasibility study to invest in the first integrated Petrochemical Complex in Vietnam.

SCG Chemicals has developed high value added products in response to customers' needs such as specialized polymers for medical equipments, pipes, electronics, automotives, and packagings. In addition, SCG Chemicals has developed special grade polymers such as fire-resistant electrical conduit, wood plastic composite product (e.g. flooring and lattice), and added further value by designing a temporary shelter made from strength plastic for natural disaster victims.

SCG Chemicals and SCG Paper jointly researched, developed, and patented its technology for transforming used caustic soda from Olefin plants to salt compound that is used in the process of kraft pulping, generating a new revenue stream from such patent.

Furthermore, SCG Chemicals has joined together with other leading industrial companies in Thailand in founding 'Community Partnership Association' in Rayong province to assist in developing Map Ta Phut industrial estate as a model of Eco Industrial Town while developing the community to a better living standard.



SCG Paper is one of the largest integrated manufacturers of paper products in Thailand and ASEAN. It comprises a wide range of products including pulp, printing and writing paper, packaging paper, and corrugated container. The products have gained wide acceptance in both domestic and international markets for their world-class quality standards. SCG Paper is also a member of The Sustainable Forest Products Industry

(SFPI) of The World Business Council for Sustainable Development (WBCSD).

SCG Paper has invested in several countries to achieve sustainable growth in ASEAN. In Vietnam, Vina Kraft Paper Co., Ltd. produces high quality packaging paper whereas, Alcamax Packaging (Vietnam) Co., Ltd. and New Asia Industries Co., Ltd. produce corrugated container. In the Philippines, United Pulp and Paper Co., Inc produces high quality packaging paper. In Malaysia and Singapore, TCG Rengo Subang (M) and TCG Rengo (S) produce corrugated container. Furthermore, SCG Paper together with joint venture partner Nippon Paper Group of Japan produce Machine Glazed high value added paper for packaging use in the food and medical industries.

SCG Paper developed innovative products and services for serving real customer needs such as G Technology for environmentally friendly corrugated container that reduce resource utilized; G Plus, an innovative corrugated paper that better withstands stacking weight and protects goods; and Design Solution Center, which provides integrated product design and development services.

SCG Paper conducts sustainable business through its forest management, pulp and paper production received FSC (Forest Stewardship Council) standard of FM (Forest Management) and the first CoC (Chain-of-Custody) recognition in Thailand as well as helped communities through 'Thai Farmer's True Friend' project by introducing 4 new innovative clones of Eucalyptus to farmers to grow and create sustainable revenue.



SCG Cement manufactures and supplies cement, ready-mixed concrete, concrete products, white cement, mortar, and refractory as well as provides technical services and consultations on plant installation to customers within and beyond SCG. It is the member of The World Business Council for Sustainable Development-Cement Sustainability Initiatives (WBCSD-CSI), a cooperation among cement industrial members around the world to show their willingness to adopt Cement Sustainability Initiatives to their operational excellence.

SCG Cement still maintains its domestic leadership and is expanding to regional markets such as investing in a leading ready-mixed concrete business in Indonesia and will expand cement production base in Indonesia in 2015. Also, SCG Cement invested in cement plant establishments in Vietnam and Cambodia and ready-mixed concrete plants in Vietnam, Cambodia, Laos, and Myanmar.

SCG Cement has continuously developed a variety of innovative products, including Portland Composite Cement, Cement for pre-stress concrete, Cement for Precast concrete, Special Mortar cement for bathroom walls, Reinforced concrete, and trained expert advisors for customer consultation regarding the integrated utilization of its cement products.

Additionally, SCG Cement joined Thai Cement Manufacturers Association's members in setting up 'Cement Partnership Initiative' in Saraburi province to develop an environmentally friendly practice that nurtures the community and support a better living conditions.



SCG Building Materials is a large scale building materials manufacturer in the ASEAN. SCG Building Materials offers a various range of products addressing all construction-related needs; these include roofing materials, ceramic tiles, ceiling and wall, insulation products, sound insulation materials, faucets, sanitary wares and landscape products. It provides a full range of products and services to customers in the form of complete solutions provider via Roofing Center, COTTO Studio and Home Solution Center, which serve customers under the concept of 'One Stop Shop, One Stop Service'

SCG Building Materials has expanded its operations in the ASEAN region such as establishing a light-weight concrete plant in Indonesia, establishing a showroom in Vietnam, and has entered into an agreement to purchase Prime Group Joint Stock Company, the largest ceramic tile manufacturer in Vietnam, as well as increasing its share in Mariwasa-Siam Ceramics, Inc., the largest ceramic tile manufacturer in the Philippines.

Moreover, SCG Building Materials has also introduced innovative products in response to customers' needs yet are environmentally friendly and improve its production to reduce energy consumption such as Tra Chang House Cooling System, a well-ventilated and air-cooled through roofing, ceiling, wall and surroundings, Light-weighted wall system that minimizes installation time and reduces overall manpower, and a rapid interlock counter system.

SCG Building Materials together with Technical College formed a project called 'Home Solution Career Choice' offering diploma level education (full service home solution) to support the ever growing demand of a better qualified workforce.



SCG Distribution, domestically, is responsible for its building materials sales through dealer network nationwide and has joint ventured with Siam Global House Public Company Limited in expanding into retail sales in forms of warehouse stores as well as introduced leading edge Information Technology to service customers in SCG Experience at Mega Bangna.

For international trading and distribution, there are currently 35 overseas offices in 23 countries around the world. Also, SCG Distribution has appointed 7 SCG Authorized Dealers in Myanmar, Cambodia, and Laos to further serve its regional channels.

PT Kokoh Inti Arebama Tbk (KOKOH), Indonesia was acquired to strengthen its distribution network in Indonesia. SCG Distribution has expanded its services in ASEAN countries including implementing technology-wise; Vendor Managed Inventory (VMI) system links information from/to seller, warehouse, and customer making warehouse management more efficient and accompanied by real-time logistics monitoring via Safety Monitoring Center to ensure logistical safety standard.

SCG Distribution initiated a project to manage closed system coal stock pile at Wat Bandai pier, Amphoe Nakhonluang, Ayutthaya province and Century pier, Amphoe Muang, Samutsakhon province to reduce the effect on communities and the environment. Also, SCG Distribution helped improve truck drivers' skill and knowledge to qualify in SCG Logistics' partner sourcing.

SCG Investment

SCG Investment is in charge of corporate investment both domestically and internationally in non-core businesses ranging from the automotive business, agricultural machinery business, and steel business. These investments are joint ventures with well-known partners such as Kubota, Aisin Takaoka, Musashi Seimitsu, Toyota Motor, Yamato Kogyo, Hayes Lemmerz International and Michelin.

Details of key products and services, subsidiaries, joint ventures, location of offices and facilities within Thailand and other countries, and changes in its shareholdings are presented in the 2012 Annual Report.

Message from President & CEO



A handwritten signature in black ink, reading "Kan Trakulhoon".

Kan Trakulhoon
President and CEO, SCG

The global sustainable development movement commenced 20 years ago has come to a changing point yet again at United Nation's 'The Future We Want' or Rio+ 20 in June 2012 with a report on Green Economy in the context of sustainable development and poverty eradication. This shows sustainable development has become an integral part and is interconnected to others more than ever. It also initiates a new perspective on businesses with anticipation for corporate to drive sustainable consumption without encroaching natural resources and environment. Therefore, sustainable development is another aspect for businesses. It is a strategic mean to create value and differentiation through process improvement and less natural resource dependent technology while reinvent environmentally friendly products and services. Meanwhile, it helps strengthen the community with employee engagement lending an improvement in work environment while allowing the company to sustainably grow.

SCG conducts its businesses in line with good corporate governance and principle of sustainable development. SCG commits itself to its 100 years of longstanding tradition of organizational and employee development, which helps drive innovation in products, services, work processes and business models, all of which create higher value to shareholder, investor, customer, employee and all stakeholders related.

Beyond determination of developing and creating values to meet the global standard for a better ecology, SCG also stresses the importance of building a strong community as a fundamental factor of sustainable development. SCG continuously participates in developing human resources in all social segments such as support education and thinking process development for children

and youth leading them to be smart and ethical people, community development projects leading to self-sustained local vocations such as SCG Conserving Water for Tomorrow project which partners with local communities in constructing check dams for sustainable agricultural use, and the Restoration of Saline Land project which in turn helps improve farmers' standard of living according to his majesty King Rama IX's 'Sufficiency Economy' philosophy.

With unlimited dedication, determination, and same standard, SCG employs such responsibilities and codes to all ASEAN countries where it operates for a sustainable economy, society, and environment. And due to such dedication, SCG has been honored the Sector Leader in the Building Materials & Fixtures from Dow Jones Sustainability Indexes (DJSI) for a second consecutive year (2011-2012).

A vital factor in driving sustainable development effectively is through collaboration from all stakeholders by applying such principle to their operations. Especially, the business sector which should extend to both up-stream parties, such as material producers, products and service suppliers, to down-stream parties, such as trading partners and end customers. The collaborative strength will lend sustainable development a response to society's growth under sustainable consumption. Despite the effort on resources and time invested by SCG, we are fully committed to extending our accomplishments to both up-stream and down-stream groups. SCG has a strong belief that such effort will enable sustainable business network and establish the pride to all stakeholders who share happiness, balance and sustainability to all sectors while sustainably build an economic steady growth to the country and ASEAN region.

SCG Business Philosophy and Code of Conduct



SCG's business philosophy and code of conduct have underlined our commitment to operating business with ethics and responsibility to our stakeholders. This has been consistently adopted and practiced by the Board of Directors, management, and employees at all levels. SCG business ethics are aligned with internationally recognized principles of Corporate Governance, helping SCG to propel business growth and acceptance from all circles.

Business Philosophy

- **Adherence to Fairness** SCG is committed to the concept of fairness to all parties concerned.
- **Dedication to Excellence** SCG earnestly focuses on right performance with effort to consistently provide excellence.
- **Belief in the Value of Individuals** SCG believes that employees are the most valuable assets.
- **Concern for Social Responsibility** SCG fully performs its duty as a good corporate citizen by contributing to the communities and countries where it operates.

Code of Conduct

The Board of Directors first consolidated an employee code of practices into written documents in the 'SCG Code of Conduct' in 1987 in order to provide consistent practices throughout the organization to be aligned with SCG Business Philosophy. The SCG Code of Conduct was amended to reflect the evolution of SCG and the changes in economic and social situations. The amendment of the SCG Code of Conduct was carried out through compiling, grouping and categorizing previous versions, and also adopting and elaborating practices from business units, for example, mutual treatment under rights and freedom, provision or acceptance of any forms of assets and benefits that affect decision making, conflicts of interest, management of information and assets, trading competition overseas business operations, and money laundering prevention.

In addition to the best practice role model by the Board of Directors, management and supervisors at all levels, SCG is committed to the promotion of a working environment for employees and relevant personnel to believe in the value of the Code of Conduct practices.

SCG has a process in place to handle complaints, receiving, compiling, analyzing, and establishing a Whistleblower Policy to provide protection to any employee who reports the issues related to corruption and non-compliance with laws, regulations, company's rules and the SCG Code of Conduct. In 2012, 23

whistleblower cases were reported, and most of them were investigated. Three cases were dealt with as potential corruption cases, but the amount of financial loss was insignificant. Such instances of fraud were used to define preventive measures.

Over the past year, SCG has been relentless in raising employees' awareness about performance of duties in accordance with the SCG Code of Conduct through the employee newsletter and various electronic media. For example, a video clip featuring Little Janya, a cartoon character, portrays the ways employees conduct themselves in alignment with the Code of Conduct in an easy-to-understand cartoon style. Added to this is the SCG Code of Conduct intranet website that provides useful information including case studies as well as questions and answers concerning the code of conduct. The website also serves as a reporting channel for reporting any breach of or non-compliance with the SCG Code of Conduct.

When employees have any doubts or question, they can consult any level of their supervisors that they trust or compliance officers through the established channels. It is hoped that employees will adopt the requirements of the SCG Code of Conduct in the performance of their duties at all times, making ethical awareness a fundamental part of their professional practice. Details of the SCG Code of Conduct, SCG Corporate Governance, and Whistleblower Policy can be obtained from www.scg.co.th.

SCG Vision

By the year 2015, SCG will be recognized as an innovative workplace of choice and a role model in corporate governance and sustainable development in the ASEAN region. SCG is committed to contributing to the sustainable progress wherever we operate as well as creating value for our customers, employees, and stakeholders and enhancing quality of life and well-being of people in society. To accomplish our goals, a two-pronged strategy is taken: expanding into the ASEAN region, and building competitiveness advantages through high value added products.

SCG will be an innovative organization that carries out the comparable business practices and capabilities of a leading international corporation under corporate governance principles and high safety standards to ensure continually excellent operating results, transparency, and fairness, as well as to concern for safety, environment, and community in accordance with sustainable development principles.

2012 Highlights

Highlights	2011	2012	Page
HVA Products and Services	32 percent of revenue from sales	34 percent of revenue from sales	33
"SCG eco value" Products and Services	13 percent of revenue from sales	14 percent of revenue from sales	33
Green Procurement Volume	2,669 million Baht	3,811 million Baht	45
Alternative Fuel	12 percent	11 percent	29
Hazardous/Non-Hazardous Waste to Landfill	1 / 36 percent	0.3 / 3.6 percent	48
Carbon Label Certified (Carbon Reduction Label and Carbon Footprint Label)	40 items	54 items	44
SCG Contractor Safety Certification System (SCS)	73 percent	100 percent	61
Enhance Professional Skill of Fleet Carrier Employees through Trainings from Skills Development School	7,393 persons	9,273 persons	37
Number of Check Dam	34,004 units	51,898 units	65
Sharing Opportunities, Drawing the Future Program	258 projects, 26.6 million Baht	142 projects, 12.3 million Baht	71
Social Contribution	712 million Baht	563 million Baht	76
GRI Application Level	A+	A+	88
Dow Jones Sustainability Indexes (DJSI) / Robeco Sustainability Asset Management	Sector Leader, ranked Gold Class for the 4 th consecutive year	Sector Leader for the 2 nd consecutive year, ranked Gold Class for the 5 th consecutive year	5



Our Sustainability Approach

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SCG – The World’s No.1 in Sustainable Development

Throughout its 100 years, SCG has carried out business in line with the sustainable development approach. The Group has pledged to achieve a balance that encapsulates economic, social, and environmental value under good corporate governance principle and develop best practices in all dimensions, resulting in SCG having become the first in ASEAN to be ranked as Sector Leader in Building Materials & Fixtures from the Dow Jones Sustainability Indexes (DJSI) for two consecutive years. It is the pride of ASEAN to have a prototype organization for the industrial sector to follow to leverage the potential in pursuit of business sustainability.

Tanawong Areeratchakul, Vice President-Corporate Administration, SCG, stated the future operating plan that “The commitment and collaboration of our employees have gained SCG recognition as No.1 in the world. We are committed to consolidating working process efficiency by continuously scaling up our efforts to improve the efficiency and effectiveness of the operations to exceed the prescribed standards. This runs parallel to taking part in raising the quality of life for people, enabling the community, society, and the environment to coexist harmoniously.”

The DJSI are the first global sustainability indexes tracking the performance of the leading sustainability driven companies worldwide. The indexes are used by asset managers of mutual funds across the world as benchmarks for making investment decisions with the confidence that companies in the DJSI can create better

and sustainable economic value for investors. As a consequence, SCG strives to promote the concept of sustainable development to a broader scale.

“SCG encourages our networks to adopt sustainable development approach in their operations, starting from upstream functions or organizations related to SCG such as suppliers and business partners to downstream organizations, namely, customers and trading partners. The endeavors include providing advice and assistance on improving work processes which, in turn, will help consolidate their sustainable practices,” said Tanawong.

For other organizations, SCG pledges to educate and encourage them to operate in accordance with the sustainable development approach in earnest. Chief among them are promoting cooperation among businesses in the same industry to raise overall operating standards without compromising the ability of future generations to meet their own needs, joining the global effort by cement producers from different countries across the world (WBCSD-CSI) embracing sustainable development in their operations, and organizing of ASEAN Sustainable Development Symposium since 2010, highlighting new best practices from world-leading companies that can be applied by businesses to enhance the overall competitiveness of the country. When the concept is adopted by other countries, it will help strengthen the potential of the ASEAN region as a whole, propelling the growth of ASEAN toward the world’s leading economy and attracting global investors.



“

SCG encourages our networks to adopt sustainable development approach in their operations, starting from upstream functions or organizations related to SCG such as suppliers and business partners to downstream organizations, namely, customers and trading partners.

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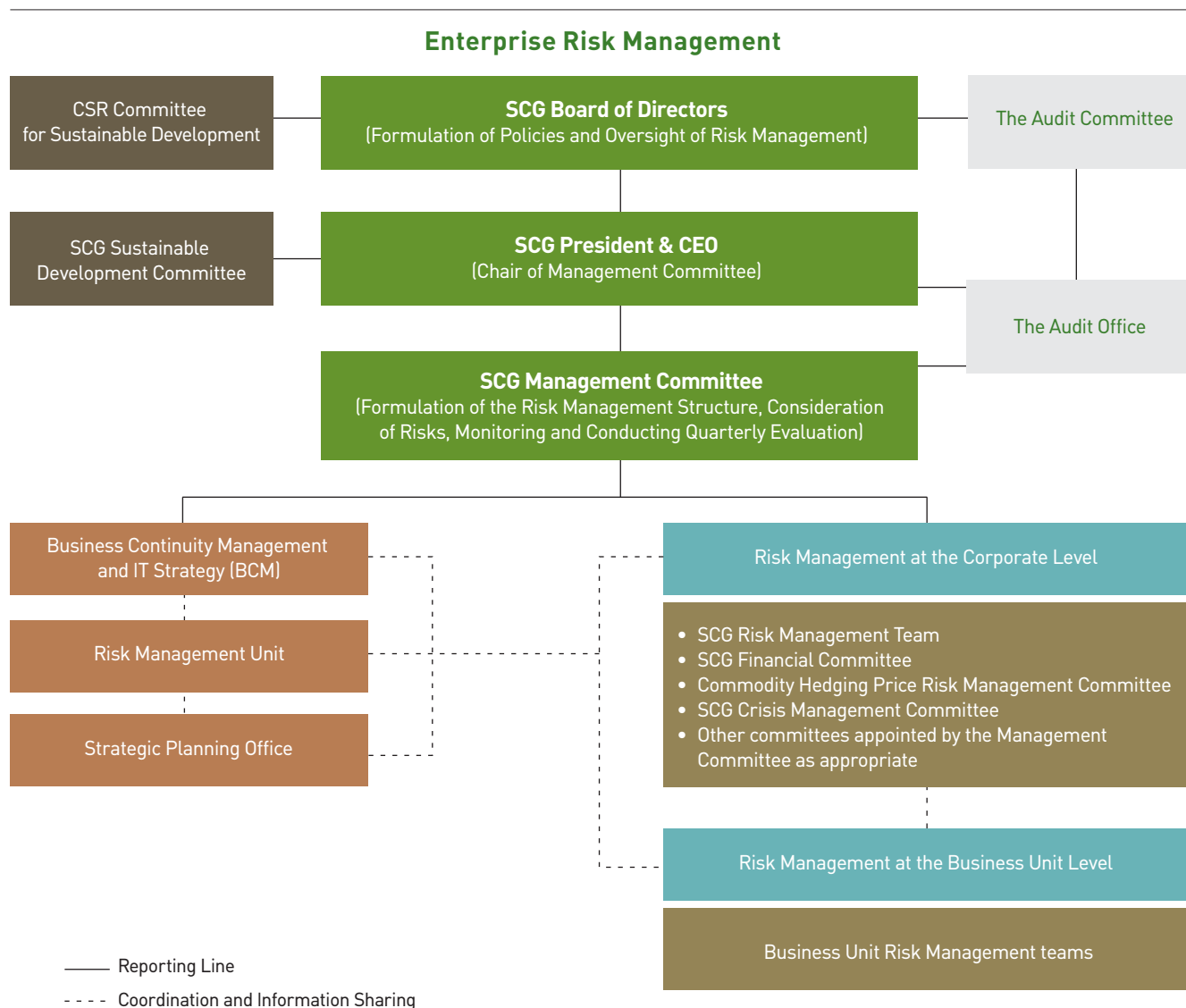
Tanawong Areeratchakul

Vice President-Corporate Administration, SCG

Risks and Crisis Management

Enterprise risk management (ERM) is an important process which assists executives in the administration and management of uncertainties or contingencies which leads to the success of the organization to achieve its established targets and also assists in seeking new business opportunities that can create value-added prospects leading to sustainable growth.

SCG has established the risk management unit reporting directly to Vice President – Finance and Investment & CFO to formulate policies and to develop strategies for management of risks based on the uniform standard among its domestic and overseas groups of business as well as to manage and monitor the risks which have extensive impacts. The risk management structure of SCG is illustrated below.



Roles and Responsibilities in Risk Management

SCG has defined that all SCG i.e. the Board of Directors, executives, and employees at all levels, are responsible for risk management. Two levels of the risk management are formulated, namely, risk management at the corporate level and risk management at the business unit level to ensure suitability, consistency for the characteristics of risks and work management process based on SCG structure together with defining the duties and responsibilities for risk management as follows:

1. Risk Management at the Corporate Level

High executives form the risk management team and are responsible for managing significant risks with widespread impacts, e.g. the volatile global economy, the fluctuation of currency exchange rate and interest rate, political violence, natural disaster, the supply chain disruption, protests from the community, the conservation of the environment and the risk in relation to the information technology. There are available corporate

offices such as the Corporate Planning Division and the investment coordination office based in various countries to collect, analyze and provide the data and information, formulate the policies and strategies to the relevant business units. For specialized risks which entail the use of special expertise to manage, SCG has appointed the committee which composes of multi-discipline specialists to be responsible for assessment and closely monitor of situations.

2. Risk Management at the Business Unit Level

Aligning with SCG's business characteristics among diverse businesses and industries, SCG allows high-level executives of each business unit to flexible manage and respond to risks with effectiveness and in a timely manner with the structure and responsibility as illustrated in the chart below.



Oversight of Risk Management

The Audit Committee has the duty to oversee, monitor and review the efficiency and effectiveness of the risk management of the management committee independently and to determine the Risk Warning Signals or the Red Flags and follow up to see if any particular company bears the risks in excess of the acceptable level as well as to ensure that there exists the appropriate corrective measures. The Audit Committee will report the result of the review of the risk management to the Board of Directors of the Company on a quarterly basis or when there arises an important incident which may impact the operation of SCG.

Risk Management Process

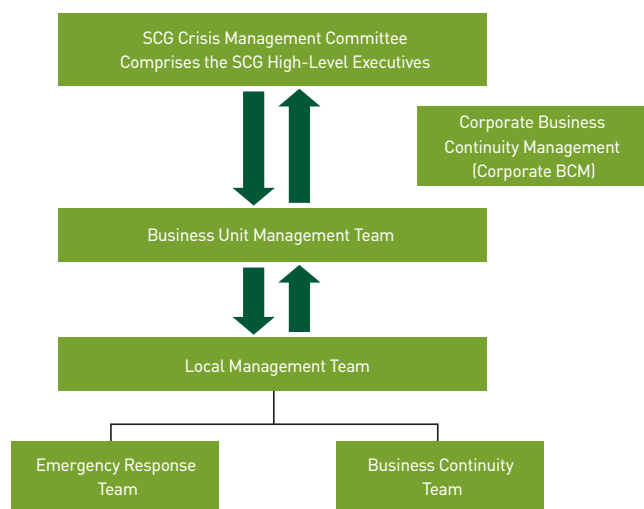
1. Risk Management at the corporate level: Managing risks that are considered as having extensive impacts to business operations, e.g. Cross Border Risks, business interruption risk and Commodity Price Risk. These are common risks among business units, the impacts of which are considered and the management strategies are outlined by the designated working team in corporate level. The certain risk management processes are as follows;

1.1 Risks arising from global crises or major incidents in countries where SCG invests (Cross Border Risks)

- The SCG Management Committee and Business Unit Management Committee consider the Cross border risks to define and apply the guidelines to support the decision-making of investing in new project, overseeing risk management for ongoing projects and projects in progress, and formulate policies and risk management guidelines to be implemented by responsible personnel.
- Strategic Planning Office defines the criteria to be applied to the assessment of risk and evaluate risks of each country in which SCG has made investments including the assessment of significant situation and/or global critical crisis as well as the ASEAN level to assess the risks and impacts which may affect SCG. In addition, Strategic Planning Office is also responsible for determining the strategies and guidelines for prevention/remedy of the risks in its holistic view.
- Companies which are impacted or based in the countries with high risks will make an assessment of such impact itself and determines the strategies/guidelines for prevention and remedy at the company's level.

1.2 Business interruption risk

To ensure that when natural disaster strikes or unexpected political upheavals occur or other incidents which cause the disruption of the business, the risks are deemed to have impacts of material importance. SCG realizes the importance of risk management as depicted with structure shown below.



The operational processes are as follows:

- The SCG Crisis Management Committee considers formulating the policies, strategies and guidelines holistic risk and crisis management.
- The Corporate BCM office monitors and coordinates the operation of risk management as well as keeps vigilance on circumstance which may cause disruption to the business and coordinates the work of crisis management.
- The Business Unit Management Team and Local Management Team coordinate with Corporate BCM office in order to:
 1. Carry out the Value Chain Analysis to assess business impacts in the event of any interruption to the business operation occurs, then follow by identification of critical processes.
 2. Assess likelihood, impact and manageability levels so as to prioritize risks.
 3. Formulate risk management strategies comprising of risk treatment options as well as Alert and Response Strategy to propose to top executives for consideration and approval.
 4. Apply the approved strategies to formulate the Risk Treatment Plan, Emergency Response Plan and Business Continuity Plan which comprise the operation plan and responsible persons to respond to the situation that may lead to the disruption of the business in each critical process as well as set drill sessions according to the business continuity management plans on a regular basis to assure that personnel involved and employees in every department understand and be able to carry out the task according to the established plan in the event of occurrence.
 5. Review risks and revise business continuity management plans on an annual basis or when there is a change in the working process.

- Emergency Response Team is responsible for taking care of the safety to life and security of property in case of emergency.
- Business Continuity Team defines the standard and conducts business restoration for regular operation resume in a defined time frame after an emergency subsides.

1.3 Commodity Price Risk Management

- The Commodity Price Risk Management Committee considers and makes a decision in determining the Hedging strategy for managing price fluctuation of major raw materials or other materials which are deemed appropriate by the committee. In addition, the committee submits reports to the SCG Management on monthly basis and to the company's Board of Directors on a quarterly basis.
- The Commodity Hedging Unit is to:
 1. Study and gather data of material requirement and consumption of each company in SCG
 2. Monitor world economy movement, the fluctuation of prices, the supply and demand of raw materials and energies used in SCG's operation.
 3. Define the guidelines and strategies for risk management in the event that the price of raw materials and energies fluctuates and has trend towards an increase resulting in a proposal to the Commodity Price Risk Management Committee for decision making.

2. Risk Management at the business unit level: risk management in conducting business operation for a specific company and unit. The processes are as follow:

- Strategic Planning Office of the Business unit defines the business directions and goals consistent with the vision and policy of corporate level.
- The business unit risk management teams' duties and responsibilities as follows:
 1. Assess and identify key risks which may deviate operations from the established goals by taking into account external and internal risk factors and information for decision-making risks to define strategies in managing each risk factor correctly and suitably.
 2. Analyze risks and develop a Risk Analysis Document (RAD) to outline definitions, indicators and both qualitative and quantitative assessment bases
 3. Assess likelihood, impacts, and manageability in order to prioritize risks and appropriately manage resources used for managing risks by employing Risk Map and Control Map. If found a high degree of risk with inadequate capability to manage such risk, then consideration should be given to determining additional risk management measures.

4. Determine strategies by taking into account the Risk Tolerance and the cost-benefit trade-off. Crucial strategies which are used by SCG are as follows:

- Retain: This strategy applies to the tolerable risks, e.g. change in the consumer behavior towards increased use of media/ electronic publishing. This may have a long-term impact on the paper business, but when taking into account that the Company has suitable factories and machinery for production, knowledge and financial adequacy to accommodate the effects that may occur; then SCG still moves forwards to continue with the paper and packaging business, but the company re-adjusts its strategy towards research and development of paper pulp enabling production of other products (fibrous chain) such as textile.
- Exploit: accepting new risk or increasing the existing risk level based on making a prudent decision through envisioning the opportunity of the value being added to the organization such as the increasing expansion of investment to ASEAN countries, in particular, in cement business to accommodate the regional growth in spite of the increase in risk, but it is consistent with the risk appetite and capabilities of SCG with its long experience in the industry and in the region.
- Transfer: risk transferred to another entity contractually such as financial derivatives with the transfer of risk arisen from fluctuation of currency exchange rate, interest rate and price of major raw materials and fuel. The transfer of risk to insurance is required by all plants with the corporate treasure office helping manage the insurance premium to the least level.
- Reduce: The strategy is to reduce the likelihood or impact of risk to the acceptable level such as the reduction on the use of coal to be substituted by bio-mass fuel. Besides helping to reduce the probability of occurrence and impact of the global warming, it also helps reduce the risk of protest from the local community.
- Avoid: This strategy applies to the risk that yields minimal return or the Company does not have adequate capability to manage such as the reduction of the shareholding ratio in the steel and automotive components businesses due to the assessment that they are not a core business of SCG. If the business continued, it would require considerable expertise and a large amount of capital investment.

- Risk Owners: To monitor and report the result of risk management to the Business Unit Management Committee and SCG Management Committee on a quarterly basis.

Key Risks and Management Strategies divided into 3 aspects according to the sustainable development approach: economic, social and environmental.

1. Economic Risk and Management Strategies

To enable SCG to run its business and sustainable development in the midst of global economic volatility, SCG reviews its risk management on a constant basis. Risk indicators are revised on an annual basis. There is a risk assessment and a report made to the Committee on a quarterly basis. There are significant risks, namely, the global economic volatility, the fluctuation of fuel and major raw material prices, the fluctuation of foreign exchange rates, the competition and the integration of ASEAN Economic Community (AEC), the foreign investment projects and the financing investment. Details can be viewed in the Annual Report 2012. As for the aspect of the Supply Chain, the details can be viewed as follows:

Supply Chain Risk

SCG considers the risk factors throughout the Supply Chain to begin with the process of procurement of raw materials and materials and equipment used in the production, transportation to sales and delivery of products and service. For the purpose of managing the risk in relation to Supply Chain, SCG uses various instruments and methodology for assessment, for instance, the assessment of supply chain disruption risks via BCM risk methodology, the Spend Analysis helps categorize key expenses of the production and develop management strategies, and the application Portfolio Diagram use to determine the methodology handling key businesses partners which may impact the business operations of the company. Based on the Supply Chain risk assessment, the risks can be specified as follows:

- Procurement: shortage of raw materials and production equipment due to inadequate supplies in the market, or dependence on certain suppliers which may lead to increasing costs due to adjustment of manufacturing process to accommodate use of substitute materials or production interruption.
- Production: Inadequate production capacity may cause a loss in sales opportunity or excessive production capacity incurring unnecessary expenses or inefficient production process may cause higher production cost and reduce competitive edges.
- Delivery: The delay or interruption of raw material and product delivery due to natural disaster, the perils of war and politics, and labor protest may cause disruption to production continuation or delayed

product shipment to customers or the fact that the transport contractor fails to comply with the law/regulations related to the environment may impact SCG's reputation and corporate image.

- **Sales of goods:** sales estimate has impact on the supply chain starting with the purchase order of raw materials and inventory management which all impact cost as well as the deterioration of raw materials or finished goods.
- **Information technology:** damages to the information technology infrastructure or the lack of systems connectivity cause the lack of crucial information needed for decision making or misleading information.

2. Social Risks and Management Strategies

SCG understands the fast changes in social conditions and consumer behaviors including the increased role of stakeholders.

Strategies for Social Risk Management

The SCG Management and Sustainable Development Committee had set strategies and targets to prevent and reduce social risks which can be summarized as follows:

- **The employee group**
 - The human resource management process from the recruitment of personnel, the employee development aimed at achieving the Competency Based Management to the instilling of the conscious awareness of sustainable development and the development of the Succession Plan to assure balanced rotation of personnel, the training and development, the appropriate compensation packages; periodic wage survey were conducted to maintain competitive wage and remuneration which SCG provides its personnel, and establishment of employee retention plan as well as whistleblowing process including the formulation of policies on protecting and compensating those who raise a complaint.
 - **Health and safety:** an emphasis is made on creating a sustainable culture of safety. Starting with the encouragement of the executives to be leaders in safety and good examples to the employees and business partners including the campaign and promotion under the concept of "Think Safe Work Safe" and the intolerable working standard if it is unsafe (Uncompromising Safety Standard) continuously.
- **Surrounding communities:** personnel participation in community and social projects is continuously encouraged both domestically and overseas including providing assistance to the community in emergency or in case of disaster as to alleviate the suffering prior to arrival of official aid.

- **Consumers:** Production of safe, environmentally-friendly products and services and the development of a quality warranty system as to regulate the safety of the products and services in every process together with developing a system in response to the complaints via online social media.

- **Other stakeholders:** diverse channels are open to listen to opinions of affected groups for prioritization of the problems or various expectations to formulate a responsive policy together with communicating the operating guidelines with transparency and efficiency; thereafter SCG will formulate a policy and practical guidelines towards various stakeholders.

Based on the analysis and assessment, SCG has key social risks, for instance, the reputation risk, the changing consumer behavior, and the occupational health and safety. Further details can be viewed from the Annual Report 2012. For human resource management, details are as follows:

Human Resources Management

SCG dedicates to excellence, believes in the value of the individual, and is well aware that employees are key components to success. The loss of key performers may result in the reduction of operational efficiency and effectiveness, lacking in the continuity of its business with increased cost for new recruit and selection and provision of training for new employees, and may cause a loss of knowledge. SCG envisions that with the accession of AEC in 2015, the movement of workforce will become more easily which may affect the retention of high-skilled workers. In parallel, an opportunity is available to attract personnel who possess vast amount of knowledge and competency from abroad to join the opening workforce. For additional strategy/guidelines for management on the topic of recruitment and development and systematic talent retention, see Page 56.

3. Environmental Risk and Management Strategies

SCG is aware of the environmental problems which have impacts on the change of climate and geographical condition and natural disaster with increasing intensity. To help reduce such impact, SCG assesses and formulates strategies and targets to prevent and reduce environmental risks.

Environmental Risk Management Strategy

SCG committed in focusing on environment management in tandem with economic and social aspects, SCG Management has defined various strategies and measures as a guideline as follows:

- Management excellence from TQM analyzing the

impact stemmed from product life cycle, set the environment indicator index to drive efficient use of raw materials and energy as a study model for innovative development and expressed through environmental targets, for instance, reduction of greenhouse gas emission, the switch to the use of alternative energy, and the reduction of industrial waste.

- Apply 3R principle of Reduce, Reuse/Recycle, and Replenish.
- Leverage supply chain trading partners such as upstream business partners with support to impart business knowledge and manufacturing from green procurement and Greening Supply Chain while develop downstream consumers to be sustainable consumers, and develop environmentally friendly products and services with innovation under the environmental label SCG eco value.
- Participating in doing good deeds in supporting other operators in the same industry or in the neighboring area engaging in the business with environment friendliness in which SCG has initiated a prototype project entitled "Community Friend Association" in Map Ta Phut area as to create cooperation among industrial sectors with a target to ratify the result and operational guidelines to other areas in which SCG is operating.
- Be a part of an environmental network with government agencies, education institutes, Non-Governmental Organizations (NGO) to jointly solve problems and bring knowledge to be applied to objectives and targets.

Furthermore, SCG has key risks such as industrial waste, greenhouse gas and environmental impacts from office building. Details can be viewed in the Annual Report 2012. For risks due to climate change, water resource, and biodiversity, details can be viewed as follows:

3.1 Climate Change Risk

The climate change and global warming have comprehensive impacts nationally, regionally, and globally and have caused ensuing environmental risks, for instance, change in temperature has impact on the survival of life and some plants and further caused loss to the biodiversity; sea ice melting causes the rise in the sea water level in turn causing further erosion of the beach front area and flash flooding. The rise in temperature has caused draught and severe shortage of water in certain areas. The main cause of the present global warming is at the hands of human such as destruction of forests and combustion of fossilized fuel, the decomposition of the buried garbage causing methane gas.

SCG is able to reduce the cost of production of products by reducing cost of energy due to improved

operational efficiency leading to improved income from environmentally –friendly products under the label of SCG eco value and Carbon Credit. Furthermore, protest from society and community surrounding the plants reduced significantly while creating long-term competitive edge because consumers and stakeholders understand confirming by an upward trend towards purchasing of environmentally friendly products and services or has low Carbon Content.

SCG has made an assessment of factors that have contributed to the greenhouse effect phenomenon and systematically record its gas discharging to creating a database and use as base to determine a reduction of 10 % per year within 2020 from the base year 2007 including the reduction of landfills waste management in order to achieve the 'Zero Waste to Landfill' target. For additional guidelines, please refer to energy and the change in climatic condition on page 42 and industrial waste management on page 48.

3.2 Water Resource Risks

Water is the principal natural resource that is mainly utilized, e.g., SCG Paper uses water for planting Eucalyptus trees, boiling of chopped wood to produce paper pulp, rinsing of paper pulp, and generating steam for production process. SCG Chemicals uses water for plastic resin cutting process and controlling pressure and temperature of the cutting machines. The use of water by SCG comes from 3 main sources: surface water, groundwater, and piped water. Throughout the product life cycle, SCG considers the water resource risks as follows:

- **Risk from scarcity of water and the quality of water that enters the production process.** The increase in the world's population has upped the demand for use of the water in agriculture, industry, and households while the availability of natural water supply is rather limited and it is on a decreasing trend due to global warming condition. Moreover, the consumption of water by humans has caused pollution due to the discharge of waste and chemical substance into the water sources. Inadequacy of the quantity of water may interrupt the production process or send the production cost soaring due to the effort of finding availability substitution. As regards to quality of water risk, if the water brought into the production process is not up to standard besides an increased cost due to the need to condition the water, the quality of the products will also be affected including working efficiency as well as the life expectancy of the machinery. Besides, the scarcity of water also leads to price fluctuation of the water purchased for production use especially for SCG Chemicals.
- **Risk due to excess quantity of water to the extent of flooding.** Excess water during great flood or during the occurrence of natural disaster damages the company's

property, the utilities system, transport and the country's economy which leads to loss of trading opportunity due to the decline in purchasing power and the disruption of the supply chain including increased costs of recovery.

- **Risk of water quantity and quality from production.**

The water used in the production process is subject to treatment prior to release into public water which must not impact the environment and must be in compliance with regulatory requirements or otherwise the environment and ecological system around the plant will be affected, giving rise to public complaints and protest from the community or creating a burden in terms of indemnities, the cost of removal, fine penalty imposed by the law or it may tarnish the reputation of SCG.

SCG has conducted an assessment and monitored the risks systematically. Surveys and monitoring of the quantity of water at the site of water resource such as at the reservoirs, in the rivers in the area where the industries of SCG are located were carried out as to determine the critical level of water, the forecast of the trends toward the consumption of water in industrial and agricultural sectors and in the households to determine the demand for water in order to obtain the differentials and indications of the probability of water crisis. For additional management approach, see Water Management, page 46.

3.3 Biodiversity Loss Risks

SCG is well aware of its impact to biodiversity such as limestone mining which directly impacts on the biological diversities especially forestry ecology. However, for the conduct of the business of SCG, part of its business must rely on the abundance of natural resources, e.g. the process for paper manufacturing makes use of raw material, that is, Eucalyptus trees. To grow Eucalyptus, it is necessary that the soil must contain adequate and sufficient minerals and nutrients. Furthermore, flooding crisis in the past year had disrupted the availability of the sources and quantity of raw materials to be supplied to the plants.

SCG sets its strategies by inviting external environmental specialists and experts to join assessment and to provide attestation in relation to the biodiversity around the mine periodically, and formulates preventative and remedial measures to the environmental problem throughout the period of mining operation. The master plan for mine rehabilitation has been developed in parallel with mining operation. The essential resources for mine rehabilitation and biodiversity protection have been allocated by provision of capable personnel, adequate and appropriate budget throughout the life of the mining operation. Communication and public relations for

promoting the understanding among the communities through Corporate Social Responsibility activities, procurement of local plants to grow for mine rehabilitation as to restore the ecological system and biodiversity to return to the original condition as much as possible, initiation of local projects for seedling as supplement to their income and to instill the spirit of awareness in the joint care and maintenance of biodiversity.



SCG Risk & Crisis Management towards 100 Years

The key risk management approaches to overcome various crises yet maintain continuous growth for a long period of time for 100 years are summarized as follows:

1. Disclosure of information to the public straightforwardly and immediately together with adjustment of plans without delay and mistakes made used as a lesson for adjustments in future strategy/method.

During the 1997 financial crisis in Asia, the macro economy entered into recession stage; thus sending the drastic decline in demand for SCG products along with Thailand floated its Baht exchange rate, SCG foreign debt, approximately, amounting to USD \$4 billion increased immediately. The adjustment of the operating strategy was therefore a must and new methodology of business operation introduced by placing an emphasis on key issues, for instance,:

- Cancelling or postponement of the originally planned projects both domestically and overseas.
- Acceleration of all aspects of export of products by looking for increased overseas market to compensate for the decline in domestic market and to enable plants to run machinery to full capacity.

- Efficient management of cash and working capital through the reduction of inventories, the re-adjusted reduction of credit line and payment period for the customers. SCG began policies for every business to eliminate risks from currency exchange rate through the use of appropriate financial instruments under the supervision of and with advice from the SCG Finance Committee. Re-adjustment of the means to raise the fund through the issue of debenture helped reduction in cost of borrowing due to the confidence of domestic investors as well as reduce the risk from exchange rate from the use of the fund raised from the issue of debenture to pay for overseas debt.

2. Efficient Portfolio Management

SCG has reviewed its business structure periodically every 5 to 10 years to seek new business opportunities which can add value to the shareholders or to reduce impact from fluctuation affected by each industry. For instance, in 1983, SCG expanded its investment into petrochemical business which was consistent with its master plan of the State petro-chemical project to exploit natural gas from the Gulf of Thailand to maximize benefit in which petrochemical business has become the main business unit that create highest revenue to SCG. During the post-financial crisis in Asia, SCG restructured its businesses by placing an emphasis on its core businesses, that is, cement, petrochemical and paper; and had reduced their role in non-core businesses to enhance the operational flexibility and full dedication towards the core businesses.

3. Adaptability and converting crisis to opportunity

SCG has adapted its business according to the changing situation; for example, during the World War, SCG established the steel plant due to the steel had become scarce product and the steel could also be used in the production of refractory brick - a key composition of cement kiln. After its business and finance restructuring during the financial crisis, SCG has solid financial structure and a large amount of cash with envisioning the opportunity from the united AEC, SCG then expanded its investment base in the ASEAN region since 2004 to access the customer groups, business partners, trading partners and to create brands to be known before its competitors.

4. Operation of business in accordance with the principle of good corporate governance; fair treatment of stakeholders; placing an emphasis on responsible and operation transparency and verifiability.

SCG is trusted by domestic and international investors and financial institutions. This is demonstrated through the success of fundraising from various sources to

continually expand the investment. With the financial capability and foreseen opportunities of turning the financial crisis in Europe and America to be its competitive advantage, SCG managed to expand its investment to other countries with advantage on investment cost. Although the environment was uncertain, but the loan debt of SCG was stable due to its disciplined and decent payment record, its stable cash flow receipts; and consultation with stakeholders such as bank lending.

Participation in Collective Action Coalition of the private sector against corruption

To escalate the overall Thai business standard in regards to corruption not only affects the reputation and investment atmosphere in the country, it also creates useless economic cost. SCG therefore supports anti-corruption practice with declaration of its intention to joint force with the united alliance of Thai private sector to counteract corruption.

SCG has set guidelines related to counteracting fraud and corruption, e.g., to do business transactions with public sector organizations, the acceptance of or giving of gift/ souvenir or any business abroad stated in "SCG Code of Conduct" book that required every employee who working domestically and abroad to comply with. The disciplinary actions for non-compliance was defined and published on website to acknowledge every relevant party. The Corporate Social Responsibility Committee for Sustainable Development has been established comprising the Company's Board of Directors and top executives to oversee the donation of money and goods from/to persons and third-parties. Furthermore, there are available channels for filing complaints via the "whistleblower system", letters and e-mail if employee and/or stakeholder find suspicious behavior, violation, or non-compliance with the company's ethics and codes.

Approach for SCG risk management process and capability improvement

To response to rapid change of business environment which gives rise to new risks constantly, SCG has improved process and its capability to manage risks on a continual basis. SCG, therefore, adopted COSO (COSO Enterprise Risk Management) and ISO 31000:2009 and adapts to SCG business natures and practices, sends personnel to attend the risk management workshop seminars continuously as well as conducts a study visits and knowledge exchange with leading organizations both domestically and abroad. Furthermore, a network is created for exchange of knowledge and experience with various organizations of both government and private sectors via the Institute of Internal Auditors of Thailand.

Stakeholders

With diversified groups of stakeholders integrated into business conduct, SCG uses distinct tools in search of needs and expectations, for instance, stakeholder dialogue, stakeholder surveys, joint meeting, and brings complaints, suggestions, and opinions to apply for performance improvement and responses to the expectation of each group of stakeholder appropriately and continually, which will result in sustainable growth based on participation and good corporate governance of SCG.

Furthermore, the CSR Committee for Sustainable Development has defined the screening process for consideration in supporting the project or corporate social responsibility activities systematically in order to achieve maximum efficiency or highest benefit by taking into account the participation level in practices. This process helps SCG to have a certain direction in giving support to social activities on a uniform basis.

SCG Stakeholder Engagement Approach



Information channels from stakeholders

Stakeholders

Stakeholders	Practices and Strategies
Customer	Develop products and services to respond to diverse needs and maintain manufacturing standards
Employee	Develop employees' competency, provide fair treat on the basis of human rights and safety
Supplier	Comply with the framework of trade competition in good faith in accordance with the contract and ethics
Contractor	Pay reasonable compensation, raise the quality in term of safety and environment, develop competency and quality of skilled workforce
Community	Conduct business with integrity, support activities for the development of life quality
Shareholder	Conduct business according to corporate governance and SCG business philosophy
Investor	Treat shareholder with fairness, provide assistance and consultation.
Creditor	Treat the creditor with equity, fairness and transparency according to the terms of contract.
Government Agency	Follow the guidelines in doing transactions with the State, code of conduct and participate on academic collaboration
Media	Disclose information, data with transparency, correctness and promptness
Civil Society, Academics	Conduct dialogue, joint implement sustainable business operation in line with community and societal development
Competitor	Treat competitor fairly within trading competitive framework in good faith legally and ethically

In 2012, SCG Sustainable Development Committee has organized a forum of Opinion Panel to receive a diversity of perspectives and concepts for the third consecutive year. Experts from government, private, industrial, educational and civil society sectors were invited to join the opinion panel for dialogue on the issue of operation to create the sustainable development of SCG and to listen to the expectation from different perspectives. The results of organizing this Opinion Panel are recommendations on various issues comprise:

1. For the expression of the social responsibility, the scope of work and support should be expanded to cover the women group (marginalized opportunity); the devolution of power, peacefulness and nonuse of violence.

2. Development model with an aim to strengthen community will be achieved if certain community has vigorous leader. Nevertheless, many communities are still lacking in good leaders; therefore, the support of this point should be initiated and encouraged in order to expand the strengthening of community.

3. For the promotion of knowledge and awareness of sustainable development, ramification should be comprehensive and applied the obtained knowledge to develop small and medium enterprises (SMEs) to present more on value-based knowledge achievement.

4. For the provision of support to vocational education or professional education, this is a good program although the success is hard to come by, but continual effort should be made and cooperated with the relevant parties to achieve perceptible success.



Sustainable Development Issues

Corporate management towards sustainability requires the balancing between revenue, resources and environment conservation, and harmonization in living with communities especially the surrounding communities, in line with good corporate governance principle. This has become a great challenge for organization with various business units. Entering its 100 years of operation, SCG has experienced through such various changes and learning, with supporting from relevant stakeholders resulted in the substantial improvement to become a business leader and a role model of sustainable development that enhance good quality of life of the communities where it operates.

SCG is committed to the 4 business philosophy toward SCG vision, ‘to be role model in corporate governance and sustainable development’. SCG has conducted Community Satisfaction Survey in areas around and adjacent to its

plants, exchanged and communicated directly with communities. Moreover, the dialogues with a various stakeholder groups such as government agencies, NGO, public affair offices, academic institutions, and the media have been conducted to gather concerns and suggestions. SCG also invited the experts and thinking leaders to join Opinion Panel with our top executives to exchange opinions and the expectations for continuous improvement. The sustainable development issues are then analyzed and assessed in conjunction with risk management according to the assessment results of sustainable development by Dow Jones Sustainability Indexes (DJSI) to establish a Materiality Matrix as depicted below. The matrix helps summarize and prioritize significant sustainable development issues which are subsequently incorporated into SCG’s Sustainable Development Committee plan.

Stakeholders' Aspect	High Significance	<ul style="list-style-type: none">• Climate Change• Air Quality Control• Product & Service Responsibility• Community Engagement• Community Strengthening• Information and Report Disclosure	<ul style="list-style-type: none">• Health and Safety• Energy Management• Water Management• Waste Management• Environmentally Friendly Products & Services
	Significance	<ul style="list-style-type: none">• Resource Utilization• Biological and Ecology Diversification	<ul style="list-style-type: none">• Employee Care• Good Corporate Governance• Risk Management
	Significance		High Significance
SCG Aspect			

Management Approach to Sustainability

The conduct of a business towards sustainable development must rely on knowledge, understanding, cooperation, and participation of stakeholders, especially employees, on the formulation of policy, strategy, work plan, target and evaluation in order to review and improve work process as well as the communication to relevant parties to build the understanding of sustainable development approach.

SCG has been operated its sustainable business in accordance with the corporate governance throughout its 100 years. To cope with growing numbers of employee and business expansion while facing diverse challenges, the

guideline of sustainable development approach was officially founded. In 1991, the policy for conservation of environment and safety was announced; and in 1995, the Committee for Conservation of the Environment was appointed. Later in 2001, the Environment Report was prepared. Thereafter in 2007, the vision was introduced for it to be a role model organization for corporate governance and sustainable development.

From consistent progress and evolution, SCG has improved the structure of the Board of Directors to have the purview of linked responsibility as to enhance the efficiency and effectiveness as follows:



- **CSR Committee for Sustainable Development;** comprises 5 delegates from the Board of directors and 3 delegates from SCG top executives with duties to define the policy and operation guidelines for social activities from a macro view including considering the linkage and progress of the working plan of SCG Sustainable Development Committee and of SCG Foundation.

- **SCG Sustainable Development Committee;** comprises top executives, that is, the Presidents from every business unit and the vice presidents to define the policy, strategy, operational plan and the monitoring of work performance in the aspect of sustainable development in relation to the operation of business as well as the support to be given to the surrounding communities of the operation area.

- **SCG Energy Committee;** comprises top executives who are expert in the aspect of energy to perform the duty of defining the policy and implementation approach on sustainable energy, namely, the conservation of energy, the use of alternative energy and environmental friendly energy including the communication, campaign and promotion of energy saving awareness.

- **SCG Foundation;** comprises top executives to perform the duty of defining the policy, strategy, action plan and the monitoring of work performance in the aspect of public benefits for the society from a macro view together with an emphasis on the development of potentials of human resources including children, young adults, and occupation.

SCG has appointed the Sustainable Development Committee in each of every business unit and in Bangkok office to implement the policy and strategy on sustainable development in every operation. In addition, various working committees were appointed headed from knowledgeable and highly capable personnel in each profession such as SCG Green Procurement, Working Team for Management of Industrial Waste, SCG eco value Committee and SCG Green Building Committee to define target and approach in order to ensure the success on each aspect as set forth. In addition, the Sustainable Development

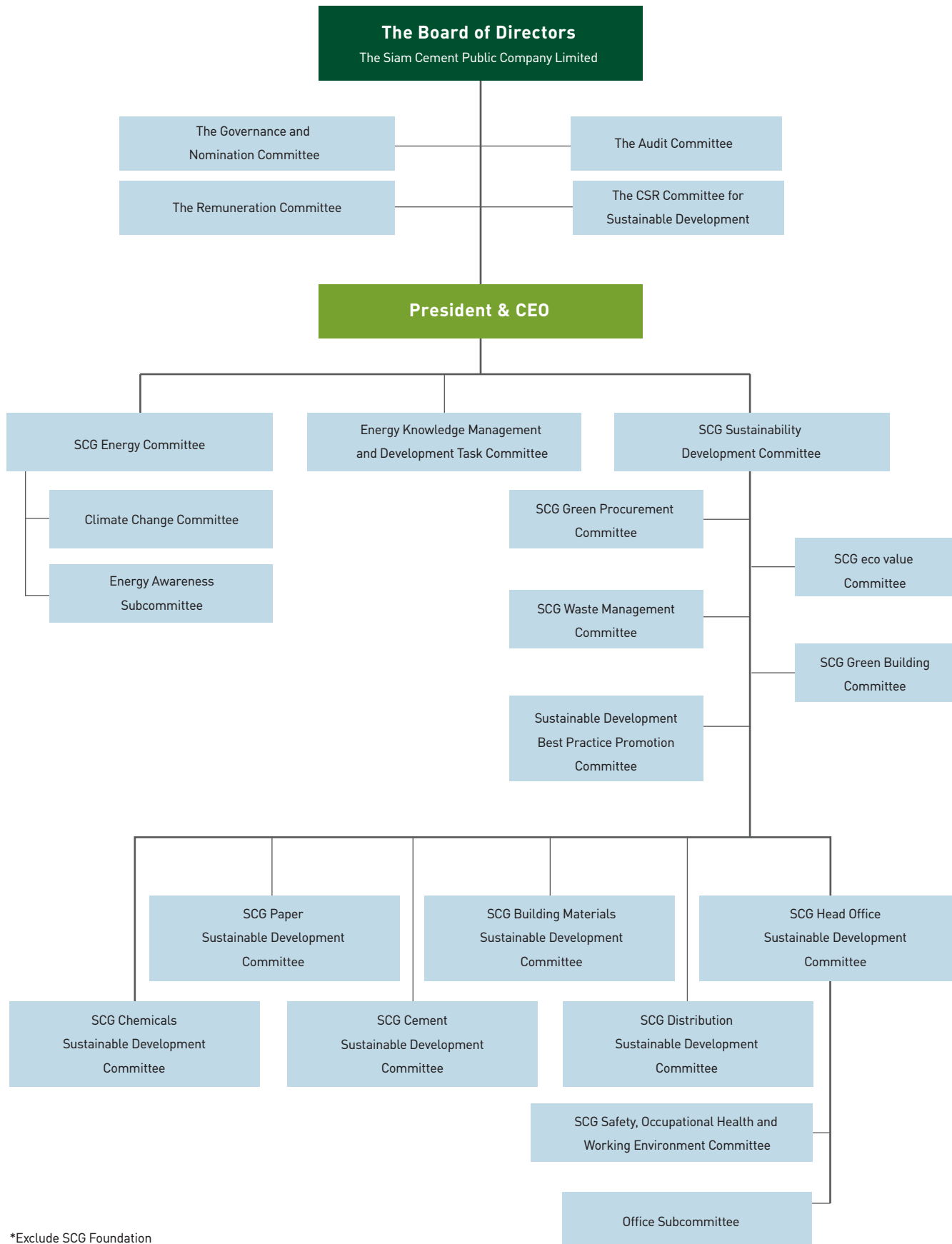
Best Practice Promotion Task Force was appointed to give support to sustainable development activities through exchange of information, knowledge, experience and best practices.

In the matter of energy, it is considered the world's important resource as SCG foresees the importance of the use of energy continually such as the adequacy and suitable availability of energy, the conservation of energy, efficient use of energy as well as the use of alternative energy and the energy which is environmentally friendly in addition to the climate change affecting the earth. Consequently, a number of committees such as the Climate Change Committee; Energy Awareness Subcommittee; Energy Knowledge Management and Development Task force were appointed to promote and support the application of fresh know-how and technology to energy saving practice to help reduce or preclude the environmental impact.

For this purpose, SCG established SCG Foundation to found funds in 1963 and was announced to be a public charitable organization in 1967 to engage in public welfare activities for the society and communities without business profit. The organized activities emphasize the development of human resource, in particular, the young children and youths, educational activities, special aptitude in tandem with the instilling the awareness of responsibility for society and the environment in addition to public welfare activities and providing assistance in various emergency cases. Employees are encouraged to volunteer to participate in such activities.

The whole structure, the organization, committee, subcommittee, and task force established by SCG has the objective to provide the opportunity to the organization to improve, develop and create balance in the course of doing business, the care of the environment and the betterment of good quality of life for the society and community through the participation of employees, business partners, and every group of stakeholders in creating such sustainable development for the country and for the region.

Sustainability Management Structure*



*Exclude SCG Foundation

Sustainable Development Plan

SCG has operated its business in accordance with the sustainable development principle, by expansion of its business to ASEAN region along with the development of high value added products and services, which are environmentally friendly, including the development of technology and innovation to increase production efficiency, use of alternative fuel and clean energy, management of industrial waste, establishment of safety standard both within the organization and business partners as well as sharing responsibility to communities via corporate social responsibility activities and strengthen communities.

In order to maintain the state of being a role model organization, the main duty of SCG is to expand the implementation of sustainable development principle to other business organizations. SCG is well aware that the important strategies are the management of value creation throughout the supply chain by being the leadership of the best production process, building of cooperation with strong business partnership, ability to respond to the customers' needs, and promoting the concept of sustainable development.



SCG Sustainable Supply Chain



Progress of Sustainable Development Plan in 2012

Program	Page	Action Plan	Actual Performance	Next Step
Economic Dimension				
High Value Added Products and Services [HVA]	33	<ul style="list-style-type: none"> • Gather and prepare SCG Core Technology for sharing and further development • Promote and support R&D Procedure compliance to realize its further development 	<ul style="list-style-type: none"> • HVA sales revenue accounted for 34 percent of revenue from sales 	<ul style="list-style-type: none"> • Develop channels for receiving needs and creative ideas for product and service innovation
Corporate Governance	23	<ul style="list-style-type: none"> • Develop SCG Supplier Code of Conduct • Develop Supply Chain Collaboration System 	<ul style="list-style-type: none"> • In Progress 	<ul style="list-style-type: none"> • Enforce to all business partners • Collaborate with business partners to develop sustainable development
Environmental Dimension				
Climate Change	42	<ul style="list-style-type: none"> • Reduce greenhouse gas emissions from production process and from third-party energy purchasing • Support business partners' and clients' greenhouse gas emission reduction 	<ul style="list-style-type: none"> • Decreased scope 1 greenhouse gas of 1-9 percent per unit of production • Decreased scope 2 greenhouse gas of 5-24 percent per unit of production for SCG Chemicals and SCG Paper • Decreased scope 3 greenhouse gas from logistics of 55,000 tons 	<ul style="list-style-type: none"> • Verify reporting of greenhouse gas inventories • Develop RDF (Refuse Derived Fuel) for fuel substitution • Extend scope 3 greenhouse gas reduction to cover Critical Suppliers
Energy Management	42	<ul style="list-style-type: none"> • Increase efficiency of manufacturing processes 	<ul style="list-style-type: none"> • Decreased energy consumption of 3-8 percent per unit of production for SCG Chemicals, SCG Cement, and SCG Building Materials 	<ul style="list-style-type: none"> • Support R&D and develop higher alternative energy usage via SCG Core Technology and new ones such as Gasification, Pyrolysis, and Torrefaction
Water Management	81	<ul style="list-style-type: none"> • Increase efficiency of manufacturing processes • Follow 3R (Reduce, Reuse/Recycle, Replenish) principles 	<ul style="list-style-type: none"> • Decreased water consumption of 11 percent per unit of production for SCG Chemicals 	<ul style="list-style-type: none"> • Support R&D and developed 3R projects to reduce water consumption
Waste Management	48	<ul style="list-style-type: none"> • Eliminate waste landfilling 	<ul style="list-style-type: none"> • Industrial waste sent for landfill included; • 0.3 percent of hazardous waste • 3.6 percent of non-hazardous waste 	<ul style="list-style-type: none"> • Extend research and development of waste utilization to create value added • Extend research application towards the entire supply chain
Biodiversity	49	<ul style="list-style-type: none"> • Preserve and rehabilitate the biodiversity and reduce environmental impacts 	<ul style="list-style-type: none"> • Rehabilitation and biodiversity study of all cement quarries 	<ul style="list-style-type: none"> • Expand study by forming collaboration with external experts to establish learning center for biodiversity and rehabilitation technique for quarries

Program	Page	Action Plan	Actual Performance	Next Step
			<ul style="list-style-type: none"> Sustainable forest management of 48,280 rais in accordance with the Forest Stewardship Council (FSC) standard 	<ul style="list-style-type: none"> Enhance sustainable forest management by FSC standard together with local communities and specialists in monitoring plant and animal species closely
Environmentally Friendly Business	45 33	<ul style="list-style-type: none"> Support the implementation of SD Upstream Supply Chain Support and create awareness to SD Downstream Supply Chain 	<ul style="list-style-type: none"> 3,811 Million Baht in purchasing volume of products registered under the Green Procurement List 61 products certified with SCG eco value, equal to 14 percent of revenue from sales 	<ul style="list-style-type: none"> Help develop capabilities of business partners to be registered in the Green Procurement List and increase green-procurement Promote and raise stakeholders' understanding and use of SCG eco value products
Social Dimension				
Health and Safety	60	<ul style="list-style-type: none"> Prevent workplace and road accidents 	<ul style="list-style-type: none"> Employees' and business partners' accidents resulting in Incident rates (Lost time cases) were 0.06 and 0.04 cases/200,000 man-hours, respectively. Serious accidents resulting in total fatalities were 11 cases 	<ul style="list-style-type: none"> Expand scope of information gathering and reporting to cover third parties such as interns and visitors Emphasize on prevention of incident from transportation and vehicle Promote safety awareness and extend as part of employees' and business partners' evaluation indicator"
Human Rights	56	<ul style="list-style-type: none"> Promote compliance and pledge to Human Rights Educate employees and business partners regarding Human Rights 	<ul style="list-style-type: none"> Declare commitment publicly to support UN Global Compact principles 	<ul style="list-style-type: none"> Promote and extend complied implementation and commitment to business partners
Human Capital Development	56 61	<ul style="list-style-type: none"> Enhance capabilities and provide knowledge and skills required for responsible tasks and balancing between work and good quality of life Promote safety standard to business partners 	<ul style="list-style-type: none"> Resignation rate lowered to 2% Employee satisfaction survey result was high All business partners were certified on safety standard 	<ul style="list-style-type: none"> Summarize knowledge, create collaboration and extend the success to business partners Extend scopes to cover eco-efficiency standard
Stakeholder Engagement	18	<ul style="list-style-type: none"> Develop communication channels and responding process that could respond to stakeholders appropriately 	<ul style="list-style-type: none"> Stakeholder Engagement results were considered as a part of Materiality which is defined in action plan and medium term plan 	<ul style="list-style-type: none"> Analyze, evaluate, and develop appropriate activities based on results from the stakeholder engagement process



Sustainable Economy

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Green Logistics: Environmentally Friendly Transport

“Today’s world business trends indicate that an organization has to compete not only in terms of high product quality and customer responsiveness, but also, environmentally friendly transportation or Green Logistics is another crucial factor contributing to a firm’s competitiveness where energy price is the main cost of products and services. Located at the heart of the ASEAN region, Thailand has been considered as a logistics hub due to its connection to several major roadways reaching several countries in ASEAN, and also to an important sea transport route, the Strait of Malacca”. With this in mind, Nithi Patarachoke, Managing Director of SCG Logistics Management Co., Ltd has applied the trends of world transport business and Thailand’s geographical advantage to the company’s logistics operations.

SCG Logistics aims to become a leader of sustainable logistics providers in 2015. This will be achieved through efficient logistics management that results in a minimal impact on the environment as well as cutting down fuel consumption through the use of fuel efficient transportation modes.

“We provide the Multimodal Transportation Management allowing goods transported via land, sea, and rail transportation modes. As a result, the products are delivered in the most efficient and lowest energy consumption manners. We also emphasize on the application of Deadhead Reduction (reducing travelling with empty load) by focusing on Backhauling Management. The company regularly implements a Consolidation Management System to consolidate multiple shipments into a single trip by using large trucks to deliver goods to distribution centers, then having smaller trucks to deliver the goods to their final destinations. A number of our trucks are also powered by a clean and low emission fuel

such as NGV. These efforts lead us to be ‘SCG eco value’ certified, a certificate of environmentally friendly logistics services.” said by Nithi with the confidence on the company’s potential in logistics operations

An introduction of advanced information technology to logistics is a crucial move to significantly improved logistics systems. For example, Geographical Positioning System (GPS) is used for tracking fleet status and ensuring that the deliveries will reach their destinations on time. From the view point of safety management, this system is also able to create an alarm whenever a driver has been driving for too long period of time or the speed limit has been reached. This certainly results in a safe driving environment, trust, and confidence to customers in Thailand and ASEAN.

“Truck drivers are the heart of transport business. SCG therefore has established a Driver Training Institute, i.e. SCG Skills Development School, to provide safe driving training to the drivers. In additional, Public Truck Stations are also built as rest areas at various locations to allow the drivers taking a break after long-distance drives. This will prevent any undesirable incident due to falling asleep or driver’s fatigue. Proactive safety is also ensured through regular vehicle inspection and preventive maintenance” said Nithi.

As a preparation for the coming ASEAN Economic Community (AEC), SCG Logistics has a plan to locate several strategic distribution centers in different countries and provide adequate number of trucks to fulfill increasing customer demands. Furthermore, the company equips its employees, office staffs, and drivers with the required skills in order to build a platform for the international business expansion and sustainable logistics leader in ASEAN.



“

We provide the Multimodal Transportation Management allowing goods transported via land, sea, and rail transportation modes. As a result, the products are delivered in the most efficient and lowest energy consumption manners. We also emphasize on the application of Deadhead Reduction (reducing travelling with empty load) by focusing on Backhauling Management. The company regularly implements a Consolidation Management System to consolidate multiple shipments into a single trip by using large trucks to deliver goods to distribution centers.

”

Nithi Patarachoke

Managing Director of SCG Logistics Management Co., Ltd.

Economic Growth in ASEAN

Total Asset in ASEAN 55,300 Million Baht
ASEAN Contributed Revenue 8% of Total Revenue
ASEAN Work Force 10,037 exclude Thailand



SCG vision is to be the business leader and a role model for sustainable development in ASEAN, SCG has continually expanded its investment both domestic and international.

In terms of domestic expansion in 2012, SCG expanded its capacity in paper and packaging manufacturing to 400,000 tons per year in Ratchaburi and Kanchanaburi provinces as well as increased an investment in Thai Plastics and Chemicals Public Company Limited which resulted in 91 percent shares holding (both direct and indirect shares holding). In addition, SCG has invested a total of 30 percent of Siam Global House Public Company Limited to enter into retail trade business in forms of warehouse stores in response to the change of high growth in customer purchasing behavior. Investment also aims at enhancing capability of business expansion together in future.

In cooperating with ASEAN Economic Community (AEC), SCG has expanded its investment to various countries for instance, in Indonesia where SCG has invested in a cement manufacturing plant with the

production capacity of 1.8 million tons per year, a ready-mixed concrete business with the production capacity of 2.2 ton cubic meters per year, and light-weighted concrete block plant with production capacity of 6 million square meters per year.

In Vietnam, towards the end of the year 2012, SCG succeeded in acquiring 85 percent share in Prime Group Joint Stock Company which is the largest ceramic tile producer in Vietnam with the production capacity of 75 million square meters per year. In the Philippines, SCG has increased its stake from 46 percent to 83 percent in Mariwasa-Siam Ceramics, Inc. which is a predominant ceramic tile manufacturer in the country. Whilst, in Cambodia SCG has increased another 900,000 tons on top of its current 1 million tons per year production capacity in its cement manufacturing.

SCG's ASEAN operations has generated sales revenue of 31,208 million Baht which is 8 percent of total revenue, increasing 39% from the year 2011. Currently, SCG has total asset of 55,300 million Baht in ASEAN or 14 percent of total asset with international employment of 10,037 staffs.

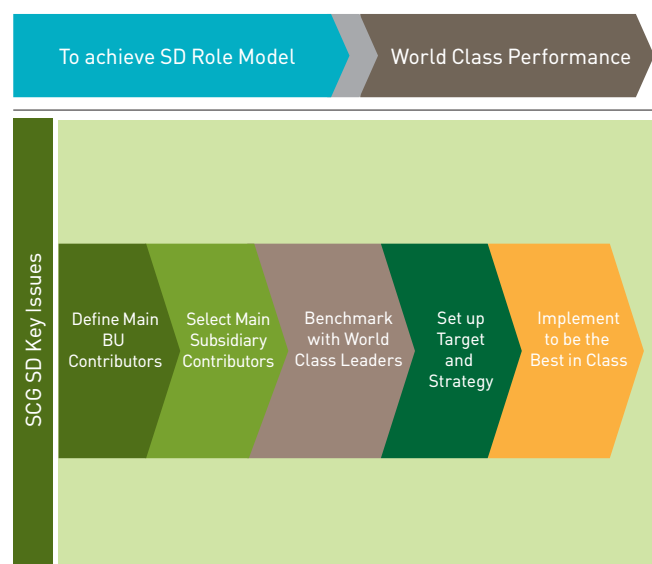
Supply Chain Management

SCG recognized that capability, opportunity, and risk in Supply Chain Management that had been changed to a modernized systematic process where consumers have more contribution while modern technology and innovation have been adopted. Rapid information exchange via social media leads to crucial factors in conducting business such as reducing cost, adding value, creating innovation, and supporting marketing.

Therefore, SCG has adopted sustainable development concept and business philosophy under good corporate governance principle as business mechanism and strategy for sustainable supply chain management to create collaboration between all related parties and set as policy to ensure its operational effectiveness.

Stage 1 of Sustainable Supply Chain: Internal production process improvement

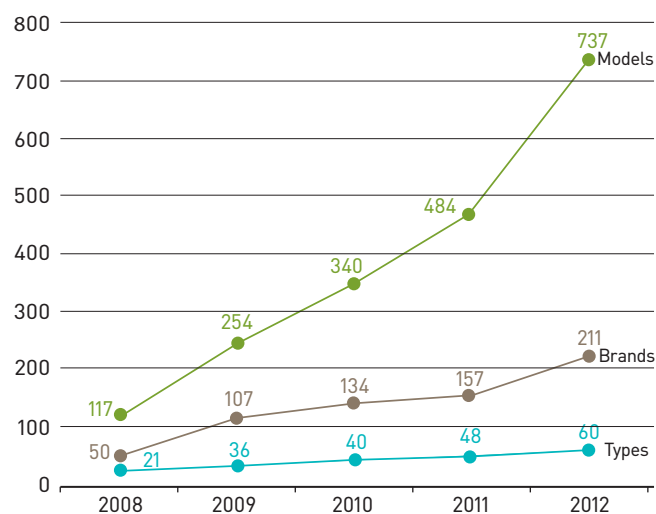
Efficiency improvement includes an analysis of processes starting from manufacturing to finish products and services together with logistics. This is to allow SCG to be a role model and match with international standard through the implementation of Total Quality Management and Total Productive Maintenance; for example, manufacturing process and production adjustments to increase the use of biomass fuel and alternative fuel by 11% in SCG Cement and SCG Paper last year. In addition, by using new Heat Recovery technology in the SCG Chemicals, it helped in reducing of more than 20 percent of steam consumption and greenhouse gas emissions; in the other words, even though increase manufacturing capacity, it also decreased effects from those processes.



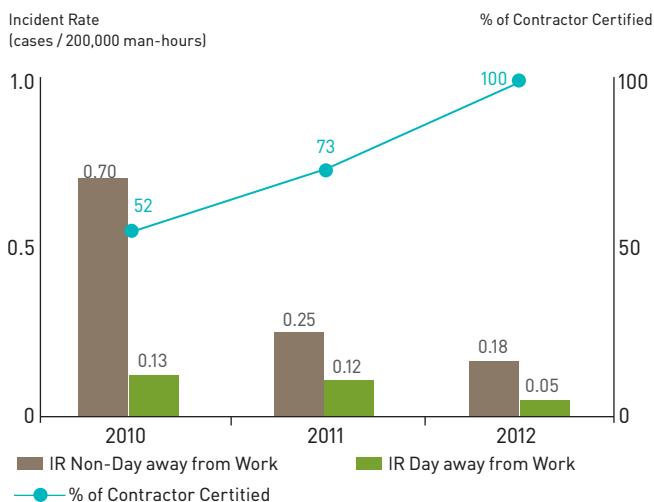
Stage 2 of Sustainable Supply Chain: Upstream leveraging (businesses partners whether manufacturers, contractors, or traders)

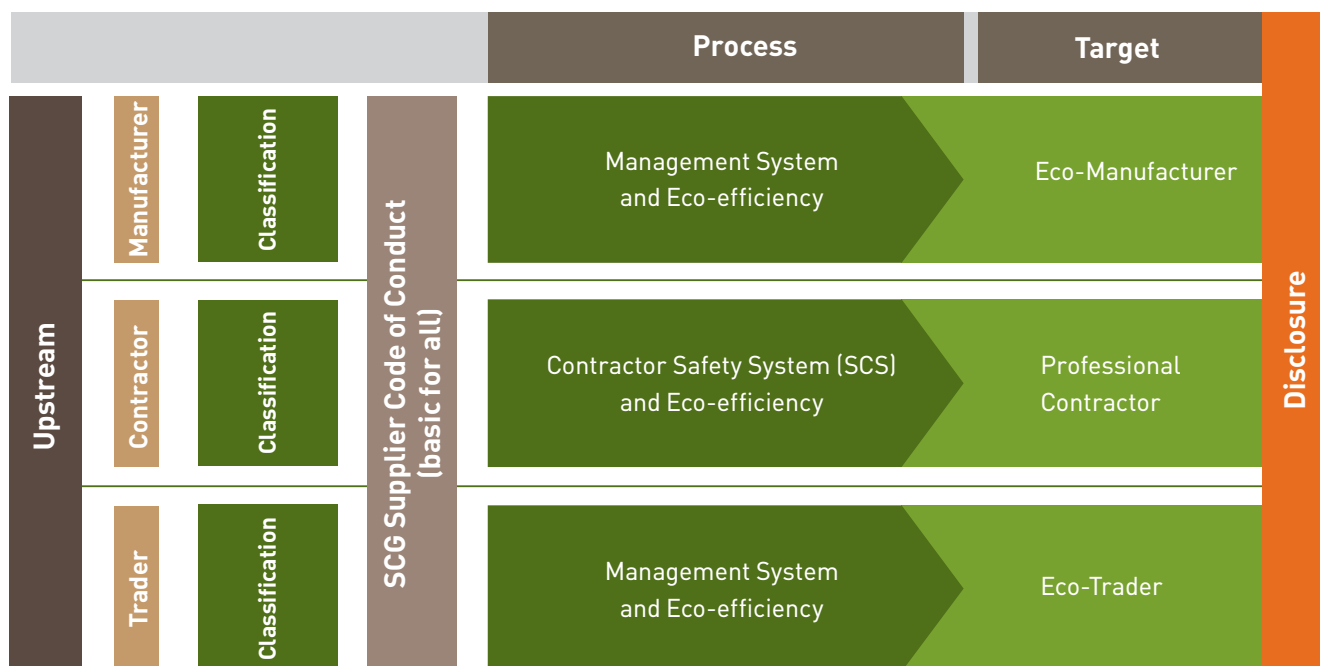
Strengthening and increasing competitiveness of business partners are not a new agenda. At SCG, we develop our business partners through 'Greening the Supply Chain' project which helps the environmentally friendly procurement program for considering products and services certified with 'Green Label' or passed standard of SCG Green Procurement. The criteria comprises of regulatory compliance, efficient use of energy and natural resources, quality control, and waste management, supporting by educating, advising, creating motivation to develop their own environmental management system, and promoting safety through 'SCG Contractor Safety Certification System' (SCS). The certification system will enable business partners in terms of safety capabilities by advising, supporting knowledge and certifying their performance.

Number of items registered under SCG Green Procurement List



Contractor's Incident Rate and Number of Safety Certification System





Success from the above projects demonstrated the sustainability partnership which resulted in the improvement of environmental management and safety performance, decreasing accident statistics and increasing competitiveness of business partners. SCG has, therefore, extended its programs to the followings;

- Encourage all business partners to exercise good citizenship as well as good corporate governance for local communities, society and environment, where SCG has developed 'SCG Supplier Code of Conduct'.
- Leverage business partner performance in accordance with SCG Sustainable Development Guidelines, where business partners will be divided into 3 main groups, manufacturers, contractors, and traders. Each group will be prioritized by their risks contribution to SCG, e.g. purchasing volume, production key factors, exclusivity source and uniqueness.
- Emphasize efficient operational management and identify significant issues; e.g. environmental-related risk. SCG provides consultation and follow up to help business partners gained expertise in environmentally friendly practice leading to their own operational development and procedure. We hope that such effort will extend its usefulness, practice, and meaning to other parties along other collaboration of the supply chain.

Stage 3 of Sustainable Supply Chain: Increase of downstream value (customers and consumers)

Sustainable business requires truly understanding of its customers' needs, where their expectations go beyond direct operational impact but extend to social and environmental sustainability security. Hence, SCG has set up channels to receive voice of customers in order to respond accordingly and promptly to meet their satisfaction. From all comments and inquiries, SCG, in turn, can develop new high value products and services while being environmentally friendly; thus creating pride and loyalty to SCG's products and services. Example products of such efforts are development of cool roof system, electricity generation roofing system powered by solar energy, water-saving sanitary ware, green read paper and sulfate resistant cement.

Customer Relationship Management



Customer relationship management or downstream supply chain management (customer, consumer product and service user) aiming to respond to the real need of the consumer, and product and service user to create business sustainability from maximizing benefits on quality and price ends as well as creating new innovations, and maintaining good relationship with the customer. SCG has set up a designated team in every business to provide product and service suggestions, handle customer's complaints, and resolve and prevent any problem that customer may experience to maximize customer's experience with SCG's products and services.

Customer Relationship Management

1. Knowing the customer and data collection in which SCG has cooperated with our dealers and Home Mart which is key building construction material dealers to utilize customers' data considered as strategic asset for marketing planning.

2. Customer behavior analysis and segmentation in which SCG has analyzed and responded to the various needs of customers; for example, ready-mixed concrete customers who require convenience in purchasing, delivery, and payment. Therefore, SCG, in collaboration with Siam Commercial Bank (SCB), has provided an innovative service called CPAC DIRECT, allowing customer to purchase ready-mixed concrete online and make

payment through SCB's internet banking. The concrete will be delivered within 2 hours. This program increased customer satisfaction and provided peace of mind to payment security.

3. Interaction with customer to learn about their need and to create customer satisfaction in the long term in which SCG has developed systems under SAP CRM 4.0 Unicode which cover Knowledge Management, e-Service, e-Selling, and Business Warehouse as part of Customer Feedback Process. This allows SCG to have the centralized customer information for sales and services to efficiently support ordering and tracking process over the Internet domestically and internationally. In addition, SCG has increased its number of channels in receiving suggestions and complaints from customers by having a dedicate team, e-mail and website, as well as a new social media management team setup to monitor and take appropriate actions to respond to any complaints. This system has been implemented at SCG Chemicals, SCG Building Materials and will be extended to other business units.

4. Offering products and services specific to individual customer by capturing customers' imagination and creativity, SCG Experience Co., Ltd., has developed "Creative Living" for two-way communications between customers and manufacturers allowing SCG to listen and advise customers using 3D technology, an innovation for living to perceive, feel, and create experience. Also, SCG



has involved communities of architects, interior designers, and home owners to meet and share expertise and experience to create a sustainable community at SCG Experience.

SCG conducts customer satisfaction survey annually to measure expectation and satisfaction levels. In-depth data allows SCG to create new innovations; for example, in readymade lintel beam technology and readymade ladder for construction time saving.

Apart from customer satisfaction survey, SCG also conducts satisfaction survey on how SCG runs its business in terms of economy, society, and environment bi-annually. In 2012, customers and stakeholders survey resulted in over 90 percent satisfaction with SCG's conduct its business according to sustainability development with detail survey results and comments will be used to improve upcoming business plans.

Voice of customer is considered as an essential factor for creating good customer relationship. Without channels to receive right information (e.g. customers' information, customers' behaviors or customers' needs), innovation development for products and services will not be able to address in-depth customers' needs precisely. Examples of voice of customer application for product and service innovations are the development of resin to address the needs of automotive part industrial sector on resin that is able to produce light-weighted car fender, easily form products' shapes including thin-shape, withstand heat and UV resistance, easily assembly with other parts, provide variety, provide durable products and glossy without paint, rapid form, leads to high production rate and reuse. This approach allows SCG to respond the needs of customers which are manufacturers and also consumers, and increase the sales.

Sustainable Products and Services



SCG vision is to be the ASEAN business leader and the innovative organization that is admirable and most desirable to work with, as well as become a sustainability development role model. To achieve this vision, one of our strategies is to develop High Value Added Products and Services (HVA) that can fulfill consumers' needs by making life more convenient and improve customers' standard of living.

Every business unit within SCG is determined to continually develop HVA to improve and better its products and services while incorporating a new creative marketing approach called "Human Value Marketing" which focuses not only to the immediate needs of the direct customer but also the people, social, and the environment around them that are affected by such products and services for Thailand and ASEAN region.

High Value Added Products and Services (HVA)

SCG research and development focuses on creating HVA and extends the differentiation from products and services. R&D Team comprises 1,034 members where 71 members hold Ph.D. SCG has spent 1,430 million baht on R&D in 2012. In addition, SCG has R&D centers for each business resulted in the HVA sale contribution reached 34 percent of revenue from sales in 2012 with its revenue goal for HVA at 50 percent of revenue from sales by 2015.

Examples of HVA

- **SCG Chemicals:** 'Special Grade Plastic' has been produced to withstand radiating sanitization for medical equipment such as syringes and saline bottles, which helps in shortening manufacturing time and production cost.
- **SCG Paper:** 'Disposable Paper Cup', innovative food containers to replace import from overseas.
- **SCG Cement:** 'Soil Improvement Cement' for road surface repairing has been developed to reduce working time and helps preserve machineries.
- **SCG Building Materials:** 'Interlock Kitchen', a cement-based kitchen, designed for quick, easy and dry installation process. An interlock system allows a durable and ready to use kitchen within 1 day.
- **SCG Distribution:** '3D Bathroom Hologram', a product showroom with 360 degree in 3-dimension displays that allows customers to enjoy shopping from the mixed products of their choices.

Green Products and Services

To realize 'Human Value Marketing' concept, SCG has set a self-proclaimed recognizable label for environmentally friendly products and services under "SCG eco value" since 2009 by adopting ISO 14021: Environmental Labels and Declarations-Self-Declared Environment Claims standard together with stakeholders'



eco = ecology + economy

The balance of environment, society and economy towards sustainable growth



value

Value that the consumer, society and the environment would receive from innovative product and service



Label endorsing product/service that has production value or utilization that are environmental friendly with higher standards than comparative products

requirements and product lifecycle assessment, for examples, product design, reduction of raw material, energy and water consumption during production and use, the use of renewable raw materials and energy, recyclability, waste and greenhouse gases emission reduction. A technical team is appointed to evaluate and endorse information in quantity terms in order to transpire a trusting "SCG eco value" label.

In 2012, SCG has 61 "SCG eco value" products and services certified contributing to 14 percent of revenue from sales, while the target SCG eco value sales volume is one third of revenue from sales in 2015.

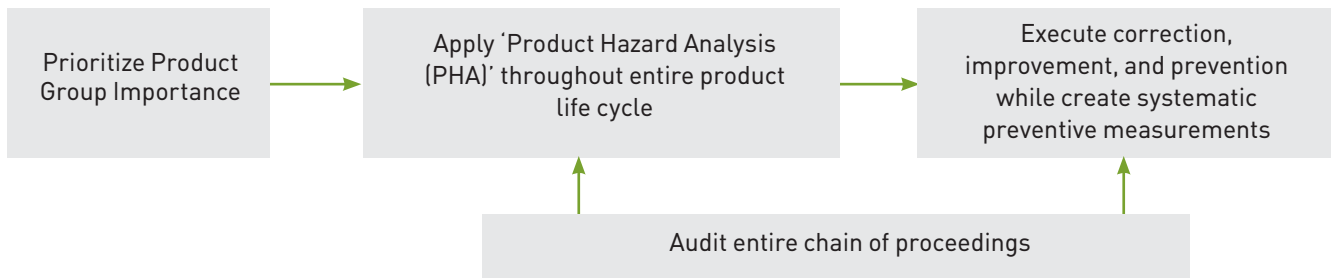
Examples of promoting product development from recycled materials are low density plastic pellets using at least 50 percent recovery steam, container board using 100 percent reused pulp, Tra Chang cement using at least 20 percent reused fly ash in substitution of clinker, and insulator using 100 percent recycled glass in substituting of natural sand.

Examples of SCG eco value products and services

- **SCG Chemicals:** low density polyethylene produced from recovery heat in replacement of total steam energy used.
- **SCG Paper:** 'Green Read' eye care paper with color texture protecting eye sights, paper surface designed to reduce 10 percent of glare.
- **SCG Cement:** Sulfate resistant concrete which doubles the cracking effect time caused by sulfate stretching.
- **SCG Building Materials:** COTTO Hygienic Tile with 90 percent anti-bacteria tile surface.
- **SCG Distribution:** A Multimodal Management, an efficient mixed of transportation mode, reduces at least 25 percent of greenhouse gas emissions compared to traditional truck transportation.

Besides the development of sustainable products and services for consumers and society, SCG also assures the trust in products and services quality and be responsible by developing quality assurance system and effectively response to customer's complaints in order to continuously create customer's satisfaction.

SCG's Processes for Building Trust in Quality Assurance in terms of Product Safety



Products and Services Responsibility

SCG has developed Quality Assurance system in alignment with the 'Product Liability Law' continuously, by building the readiness of system and related working procedures for all SCG's businesses through 'PL Health Check Program'.

In 2012, SCG extended its efforts towards Quality Assurance by expanding its scope of in-depth analysis for products and services of safety risks covering 200 product groups by applying Product Hazard Analysis (PHA) process to categorize patterns and risk levels that may be disguised in any part or step throughout the entire product life cycle. This enables compilation and categorization of risks leading to flaw prevention and improvement in all steps including warning labels that are more concise and effective. Since initiated, SCG has corrected, improved, and prevented risks in every product group as well as evaluated the completeness of the program.

PL Simulation Drill incorporates extra precaution exercises beyond PL-related complaint management such as 'Product Recall' management to prepare response in any given situation to impose and remind PL effects to all employees constantly.

Also in 2012, gathered from TQM, TPM, and ISO standards including principles and effective operational guidelines, SCG developed 'SCG Quality Assurance Fundamental Guidelines' to ensure PL Health Check Program effectiveness in all quality assurance dimensions as well as prepared proper examples as references for further guideline improvements.

Due to our consistent dedication and determination towards quality assurance, there were no significant complaints caused from health and safety regulatory violation based on product usage, customer information providing, label information or false advertising; in turn, no fines were incurred due to such matters.



“

Our key strategy is to understand the social and human needs and combine it with our capabilities to conceive new realistic and implementable ideas to match such needs. Such strategy coupled with Cross Functional and collaborative working environment throughout the organization shapes the entire product life cycle development to exploit the least resources and to minimize wastes discharged. With all these efforts, SCG is enable to create higher value products and services while being environmental friendly as stated in the company's vision statement.

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Wilaiporn Chetanachan, Ph.D.

Director of SCG Corporate Technology Office

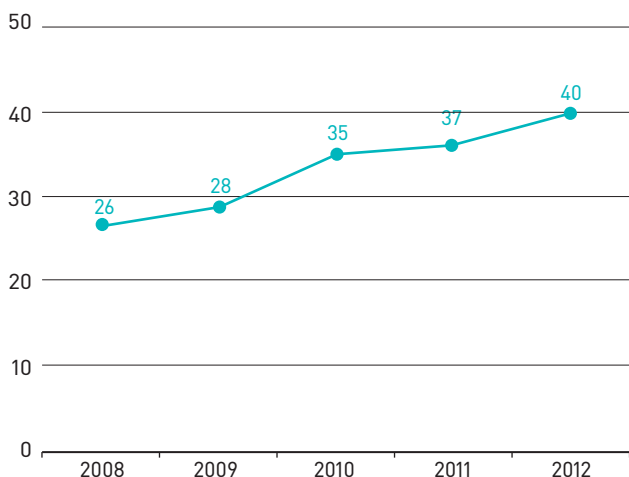
Logistics Management

SCG Logistics Management Co.,Ltd., the company under SCG Distribution, is an integrated logistics solution provider for the companies under SCG and also customers outside the group. The company has run business under Third Party Logistics (3PL) model, i.e., designing and managing overall logistics system for customers to achieve effectiveness through advanced IT, for example, TMS (Transportation Management System), WMS (Warehouse Management System), GPS, and RFID. The company has 370 fleet carriers with 7,500 trucks, 250 river barges and 30 units of warehouse and distribution center. The company has served 9 major segments of customer including Cement, Building and Decorative Products, Petrochemical, Paper, Agricultural, Automotive, Food & Beverage, and Import & Export Products. There are more than 26,000 destinations from 1,600 origins; both domestic and overseas markets included Vietnam, Cambodia, Myanmar and initiate operation in South China to accommodate the growth of AEC Challenge. As a result, the company has obtained transportation revenue up to 12,853 million baht from the total transportation volume of 40million tons, which is derived from transportation trip up to 1.5 million trips per year, equivalent to 277 million kilometers.

To sustain logistics business, it is compulsory to be concerned for community and social well being, especially safety on road transportation of employees and business partners. Even though by such consideration would result in higher operating cost, these will ensure sustainability and acceptance from both customers and communities in the long run. Based on this, the company has implemented the following development platform to enhance sustainability as follows:

Transportation Volume

Million Ton



Effective and Environmentally Friendly Logistics Management

To obtain effective logistics management, it is crucial to consider several factors to obtain competitiveness. Such factors included route determination, vehicle and logistics model selection, and also inventory management. Furthermore, the company has strong attention towards maximizing asset utilization, minimizing Greenhouse Gas (GHG) emission to ensure “Green Logistics” as well. The company has operated the following activities:

1. Deadhead Reduction – the company has focused on round trip management with full loaded on both headhaul and backhaul trips. The company has utilized advanced IT to conduct route optimization via Transportation Management System (TMS). This system has facilitated the company to match cargo among SCG and outside SCG customers, results in full loaded for backhaul. Based on this activity, the company can ensure truck utilization, reduce cost for customers and thus lead to higher sales revenue for the company. One of the most successful cases is to collaborate with Mitr Phol Group to have building materials cargo to the North Eastern Region as headhaul cargo, and transport sugar from North Eastern Region to Central Region as backhaul cargo. Presently, the company obtains 80% backhaul cargo from North Eastern Region cargo to the North Eastern Region as headhaul cargo, and transport sugar from North Eastern Region to Central Region as backhaul cargo. Presently, the company obtains 80% backhaul cargo from North Eastern Region.

2. Multimodal Transportation – the company has utilized various vehicles which consume less fuel, such as rail or barge combined with truck. By implementing this method, fuel consumption is significantly reduced comparing to using truck alone. For example, setting up Cement Distribution Center at Sri Racha to carry bulk cement by barge, and transport cement by rail to Phaholyothin Distribution Center. Besides, the company has considered increasing transport volume via barges including animal feed, building materials and paper to the South of Thailand as well.

3. Inventory Management and VMI (Vendor Managed Inventory) – the company has applied these systems to enhance effectiveness of procurement, inventory handling and transportation to the customers. For example, transportation of paper rolls from plant to cement plants for producing cement bags. After that, transport bagged cement back to areas near Paper plants so that deadhead reduction can be achieved, and also enhance efficiency on fuel consumption and thus lead to overall logistics cost reduction as a whole.



4. Reduce fuel consumption, promote the use of clean energy – the company has encouraged carriers to use natural gas (CNG) which is treated as clean energy and thus save fuel consumption. Furthermore, the company has supported and suggested carriers to modify vehicles' engine to be able to use CNG. Besides, the company has invested in owned CNG station in Amphoe Kaeng Khoi, Saraburi Province to ensure sufficient CNG among network carriers. The station is recognized to have excellence standard certified by PTT in 2010.

5. Efficient energy consumption through drivers – conduct driver's training and development, focusing on safety awareness, behavior and skills of drivers under the company's fleet to drive safely and efficiently for effective fuel consumption. In return, the company can reduce GHG by 55,000 tons.

Safety Management

The company has strong emphasized on safety management as a top priority. Several projects and activities related to safety are as follows:

- **SCG Skills Development School:** School of Safety Driving & Skills Development, a Non-Formal Private School, located in Klong Luang, Pathumthani Province.

The objective of the school is to build up driver's know-how, skills and capabilities to be a certified driver. There are two major courses as follows:-

- **Daily Execution Program** – the program is mainly related to daily execution program, including safety driving, safety product handling and service minded with safety transport.

- **Professional Driver Program:** this program consists of Professional level 1 – Listed Driver Course, Professional level 2 – Certified Driver Course, and Professional level 3 – Senior Driver Course.

In 2012, there are 9,273 drivers passed this program and SCG Skills Development School has already trained another 943 general SCG employees in the Safety Driving Course. Furthermore, the school is constructing a training field and test driving track to leverage its training quality and standard and requesting an accreditation from the Department of Land Transportation.

In addition, to continue the support in driving knowledge and safety, SCG Skills Development School has launched an advanced training program specific for its driver trainers. The program is developed based on an internationally well-known "Smith System", which is originally introduced in the U.S., to improve knowledge



SCG CNG station located in Amphoe Kaeng Khoi, Saraburi Province.



and skills required for highly qualified trainers.

According to the mega flood crisis in Thailand in 2011, many people had suffered from loss of their homes and jobs. SCG and SCG Skills Development School had cooperated with the government agencies such as the Department of Employment and the Department of Skill Development to establish the social support projects to reduce unemployment by training professional skills in logistics. Examples are truck drivers, transportation staffs, distribution center staffs. The project had been continued until the crisis was retreated.

SCG Skills Development School has also arranged a safety driving training program for new 433 candidates who were interested in driver career. Among these candidates, 288 drivers were successfully recruited and continue working as professional drivers at SCG's business partners. As a continuing support, the school also has a plan to participate in the development of National Skill Standard for truck drivers. This project will be conducted in cooperation with the Department of Skill Development and other related parties, and is expected to be completed by end of 2013.

• **Logistics Command Center**

The Logistics Command Center has been established to reduce unsafe driving behaviors of business partners' drivers by using the real-time information from GPS installed in each vehicle, for example, vehicle speeds that should different between highway routes and local routes passing community area, driving period in which all drivers shall take a rest every 4 hours, and any restricted areas that a driver is not allowed to enter to prevent a possibility of fraud. This Center is in operations 24/7 which

will alert a driver every time abnormality occurs. Currently the GPSs are installed in approximately 4,000 trucks and will be increased to 7,000 trucks in 2013.

• **Public Truck Station**

SCG has established rest areas for both SCG and non-SCG drivers in order to alleviate fatigue and reduce chances of accident. Our public truck stations are located in 4 provinces including Nakornsawan, Saraburi,



Logistics Command Center, a 24 hours working center to monitor business partners' driving behavior.



Chumporn, and Suratthani Province. Moreover, SCG, in cooperation with other petrol provider companies, has also established additional rest areas at more than 10 gas stations nationwide.

- **Safety Development Project**

Because safety is our first priority, SCGL hires a worldwide leading logistics company with high safety standard as a consultant in order to develop company's safety management system. In the first phase, formal audition will be done at all departments and suggestion for improvement opportunities will be given. Later on, the consultant will collaborate with SCG Logistics to improve the organization structure, policy, rules, and safety standard. Most importantly, safety awareness and knowledge will be provided to the employees at all levels.

- **'Safety We Care' Campaign**

To emphasize both on our safety policy and sustainable growth with our carriers, SCG by a strong support from Kan Trakulhoon, Chief Executive Officer and President of SCG, arranged a meeting in which more than 200 carriers around the country participated. In the meeting, there was the opening of a short film "Safety We Care" based on a true story of the accident from driving. Copies of this movie were also distributed to carriers as a mediator to communicate safety concern to their drivers. Additionally, an opened discussion section was held to exchange their experiences and opinions on safety in this event.

- **Safety League Project**

Many safety supporting campaigns (e.g. small group discussion among SCG Logistics staffs and drivers on safety behaviors, truck inspection programs, alcoholic and drug addicted inspection) are launched to decrease the number of accidents from transportation. The results from the activities of each unit will be scored and accumulated during a year and rewards will be given to all related parties including company's departments, carriers, safety officers and drivers in terms of financial reward and public recognition.



A cover of 'Split Second' DVD, true stories from driver's experiences, made to encourage safety driving awareness.



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The First Green Building in ASEAN Awarded LEED EB:OM Platinum

“In our quest towards providing innovative products and services to customers, SCG also places the utmost emphasis on the environment. Green Building is another of SCG’s achievements in providing comfort to the people as well as taking on our share of responsibility to the earth.” Kanapabha Akkapa, Green Building Manager of SCG Building Materials Co., Ltd. and the design team have embarked on a project to renovate Head Office Building 1&2 and Building 5 built more than 25 years ago, and turn them into green buildings that are friendly to the environment. The project was inspired by recent and increasingly frequent natural disasters. For these efforts, SCG was the first in ASEAN awarded LEED Platinum - the highest level as the Leadership in Energy and Environmental Design for Existing Buildings: Operations & Maintenance - LEED EB:OM from the U.S. Green Building Council: USGBC. The award is recognized worldwide as proof of stringent international standards.

“Apart from the infrastructure renovation which comprised use of eco-friendly building materials, solar cell and an increase of green area in the landscape, at the heart of SCG is also employees who take part in resource conservation practices by reducing the consumption of water and electricity. Tangible results include a decrease in water consumption by 30-40% and electricity consumption by 20%. SCG employees have also applied the concept of saving resources to their daily lives. This includes sorting

wastes for reuse, recycling paper, commuting by public transport or car pooling. Considering the budget of over 110 million baht and the project duration of one and a half years, the outcome is worthwhile. When you look at it from the environmental conservation point, our attempts are very beneficial to the care and conservation of our natural resources and ecosystem for us forever.”

Kanapabha and her team have also applied this concept to the construction of SCG Head Office Building 3 to be completed in 2013. The target is to certify the LEED Platinum Award for LEED Core and Shell which will be a model for other organizations to improve their offices to become environmentally friendly.

“Presently, organizations around the world, especially those in the business sector, have placed emphasis on energy saving in their offices. SCG has over the past years provided this service to a number of customers under the responsibility of our newly set up business unit comprising staff who have been trained in LEED who provide consultancy regarding the process of turning existing or new buildings so as to certify LEED. They also give advice on SCG eco value products or environmentally friendly products. We are happy with our work as we are proud to be a part of the attempt to make our world a sustainable and livable place where happy people live better quality lives,” said Kanapabha.



“

Apart from the infrastructure renovation which comprised use of eco-friendly building materials, solar cell and an increase of green area in the landscape, at the heart of SCG is also employees who take part in resource conservation practices by reducing the consumption of water and electricity.

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Kanapabha Akkapa

Green Building Manager of SCG Building Materials Co., Ltd.

Energy and Climate Change



In 2012, the continual economic growth in ASEAN resulted in the increase in the demand of natural resource usage, especially Thailand where free-enterprise economy and generally pro-investment policy exist. Similarly, SCG has continuously expanded our business; therefore, we analyzed and conducted risk assessment in terms of business, society and environment. It was a challenge for us to operate our business without causing adverse impacts on environment especially climate change and energy.

Even though countries in ASEAN where SCG conducts operations are not governed by the Kyoto Protocol for reducing greenhouse gas emissions, we defined strategies and projects to reduce and avoid risks as well as potential impacts on energy and climate change, which included:

1. Defining performance indicators and targets for energy consumption and greenhouse gas emissions in annual action plans.

2. Defining target on reduction of greenhouse gas emission by at least 10 percent by 2020 from base year 2007 level.

3. Preparing the greenhouse gas emission inventory and report in accordance with reporting guidelines from WBCSD and ISO 14064-1. Data verification was also conducted by the third party. SCG has prepared the greenhouse gas emission inventories and reports for all business units since 2005.

4. Defining methods to reduce greenhouse gas emissions and energy consumption by increasing production efficiency and improving production processes for using alternative fuels.

5. Arranging channels to exchange best practices for the reduction of greenhouse gas emissions and energy consumption to maximize methods and measures to other

companies under SCG as well as business partners across supply chain.

6. Conducting research and development for products and services to be those contribute in less greenhouse gas emissions as well as communicating to customers to participate by using these products and services.

SCG analyzed the sources of greenhouse gas emission based on the scope of greenhouse gas emission inventory and report. It was revealed that the majority of gas emissions (i.e. approximately 90 percent of total emissions) were from fuel consumption and the processes; whereas, the remaining 10 percent was from energy purchased to be used in production processes. Therefore, SCG has been improving the production processes and technologies by applying principles of quality management in order to reduce energy. This contributed to the reduction of greenhouse gas emissions, purchased fuels and electricity costs.

To reduce energy consumption and greenhouse gas emissions, SCG implemented the following actions.

1. Reduction of Greenhouse Gas Emissions from Production Processes

- **Increase in Production Efficiency;** for example:
 - Recovering hydrocarbon gases to be used as the raw material instead of flaring. This was done by installation of pipeline to transfer hydrocarbon gases back to production processes in Map Ta Phut Olefins Co., Ltd. and Rayong Olefins Co., Ltd. which contributed in the reduction of gas flared by 450 tons per year, equivalent to the reduction of greenhouse gas emission of 2,800 tons per year.
 - Minimizing energy loss by using ceramic coating substance for energy conservation (i.e. Emisspro™)

in furnaces at Olefins and Vinyl Chloride manufacturing factories. This contributed in the reduction of natural gas consumption of 2-5% which was equivalent to the reduction of greenhouse gas emission of 40,000 tons per year.

- Installing absorption heat pump to recover heat remained in water from cooling tower to minimize steam generation from boiler in order to warm the water used at the deaerator installed at Thai Kraft Paper Industry Co., Ltd. This contributed in the reduction of steam consumption of 26,000 Gigajoules per year which was equivalent to the reduction of greenhouse gas emission of 2,600 tons per year.
- Improving cement production process by using vertical raw mill at The Siam Cement (Ta Luang) Co., Ltd. This contributed in the reduction of energy consumption of 10 Gigawatt-hours per year which was equivalent to the reduction of greenhouse gas emission of 5,000 tons per year.
- Installing pre-grinding machine for cement milling process at The Siam Cement (Lampang) Co., Ltd. which helps in increasing production capacity and saving energy of 10 Gigawatt-hours per year which was equivalent to the reduction of greenhouse gas emission of 5,000 tons per year.
- Changing raw material milling process for ceramic tile from wet milling process to dry milling process at Thai Ceramics Co., Ltd. This contributed in the reduction of energy consumption of 223,700 Gigajoules per year which was equivalent to the reduction of greenhouse gas emission of 13,935 tons.

- **Development of Products to Emit Less Greenhouse Gases;** for example: invention of formula that enhances capability of cement to withstand seawater, and reduction of clinker usage. This development contributed in the reduction of greenhouse gas generation per ton cement of 200 kilograms which was equivalent to the reduction of greenhouse gas emission of 3,560 tons last year.

- **Innovation Development and Use of New Technology to Support Use of Alternative Fuels and Biomass Fuels;** for example:

- Investing in the improvement of production process by the installation of biomass dryer at Phoenix Pulp & Paper Public Company Limited. This enhanced the capability of alternative fuel usage and reduced bunker oil usage, which contributed in the reduction of greenhouse gas emissions of 26,000 tons per year.
- Investing in the improvement induced draft fan to have larger size at The Siam Cement (Thung Song) Co., Ltd. which enhanced the capability of alternative fuel usage and contributed in the

reduction of greenhouse gas emission of 20,000 tons per year.

- Establishing Refuse Derived Fuel (RDF) Project which allowed SCG to involve in the community waste management and use solid waste as alternative fuel instead of using coal at cement plant. The pilot project took place at Doi Sa Ked District, Chiangmai Province and Ban Mho District, Saraburi Province where collaboration with government authorities in creating alternative fuels was initiated.

- **Industrial Waste Management to Avoid Sending Waste to Landfill and Incineration Especially Production-Related Waste;** for example:

- Using PTA residual from centrifugal process from Terephthalic Acid production process as alternative raw material directly as well as mixing with sludge from the retention pond for water from Terephthalic Acid production process before entering chemical process for purification to use as a raw material for lower-grade plastic production where high purity is not required. This contributed in the reduction of greenhouse gas emission from the incineration is 8,500 tons per year.
- Using ash, generated from the energy generation from coal as fuel source, as one of raw materials for building material products, e.g. brick and roof tiles to minimize landfilling (Zero Waste to Landfill).

2. Reduction of Greenhouse Gas Emissions from Purchased Energy

- **Use of Excess Heat to Generate Steam** in which Thai Polyethylene Co., Ltd. has developed production technology where excess heat can be used to generate low pressure steam. This contributed in the reduction of amount of purchased steam for Low-density Polyethylene plastic manufacturing factories of 114,000 Gigajoules per year which was equivalent to the reduction of greenhouse gas emission of 5,400 tons per year.

- **Changing Electrolyzer from monopolar Type to bipolar Type** in which Thai Plastic and Chemicals Public Company Limited has used new technology for raw material preparation at Chloride ion (Cl^-) and Sodium Hydroxide (NaOH) separation processes which contributed in the reduction of electrical consumption of 16,000 Gigajoules per year which was equivalent to the reduction of greenhouse gas emission of 2,700 tons per year.

- **Using Waste Heat to Generate Electricity,** e.g. the installation of Waste Heat Power Generation (WHG) to recover waste heat from cement production process to generate electricity. The installation has been expanded to cover all cement kilns, which contributed to 100 Megawatts, and the reduction of greenhouse gas emission of 327,000 tons per year.

- **Reducing Electrical Consumption at the Head Office** in which SCG Sustainable Development Committee has defined the energy conservation policy including setting the standard fluorescent lamp to be T5 type which generates similar light intensity with less electrical consumption (25 percent lesser) compared to T8 fluorescent lamp. In addition, LED-type lamps have been initiated to replace fluorescent lamps at the Head Office main hall area.

3. Reduction of Greenhouse Gas Emissions from Activities Conducted by Business Partners and Customers

- SCG initiated Greening the Supply Chain project to promote the green procurement. The project was to strengthen business partners, provide knowledge and advices, and create motivation from procurement system to obtain the improvement of environmental management system and minimize environmental impacts especially energy conservation and the reduction of greenhouse gas emissions.

- Transportation has been managed holistically to minimize greenhouse gas emissions by using Multimodal transportation where vehicles with lesser fuel consumption rate will be used (e.g. train or vessel together with truck), minimization of transportation with an empty load (deadhead reduction), management to ensure that transportation vehicles carry a load both to and from their destination together with C-Move type that transportation routes designed to have less distance and less number of trips. This contributed in the reduction of greenhouse gas emissions from conventional

transportation of 55,000 tons per year.

- Use of products and services where SCG the importance of research, development and response to customers' needs by products and services under SCG eco value which helps in the reduction of energy consumption greenhouse gas emissions; for example, insulation and roofing system. In addition, SCG has developed products can generate alternative energy by developing ceramic tiles capable of generating electricity using solar energy.

SCG also participates in projects with Thailand Greenhouse Gas Management Organization (Public Organization), conducts product life cycle assessment and obtains Carbon Reduction Label for 37 products (e.g. upstream, intermediate and downstream petrochemical products, cement, sanitary wares, ceramic fittings, faucet, wall and floor tiles). In addition, SCG publishes greenhouse gas emission data of 17 products with Carbon Footprint Label (e.g. printing paper, corrugated containers, mixed cement, insulator, acoustic material, and ceramic tiles).

With the efforts in the past year, SCG was able to save specific energy of 3-8 percent in SCG Chemicals, SCG Cement, and SCG Building Materials. For greenhouse gas; reduce specific GHG emissions Scope 1 of 1-9 percent (339,000 tons equivalent) and specific GHG emissions Scope 2 of 5-24 percent in SCG Chemicals and SCG Paper (277,000 tons equivalent). In addition, greenhouse gas emission from transportation can be reduced by 55,000 tons per year.



Siam Mortar Co., Ltd. in SCG Cement, the manufacturer of mortar under trademark Tiger mortar has analyzed generation sources of greenhouse gas emissions from production process throughout the product life cycle by developing formula and mixture contents, improving production processes and application; for example, selection of clean and high quality limestone, suitable size arrangement, additive improvement, change of product packaging system to be silo-type, and development of spraying system to minimize package waste, minimize dust from mixing and spray-coating in construction area, and reduce energy of the whole process. These make mortar product that can construction time, reduce waste generation, reduce pollution, and reduce greenhouse gas emissions of 120 kg per ton product compared to normal cement product, or capable of reducing greenhouse gas emissions of 10,200 tons in 2012.

Sustainable Resources Use

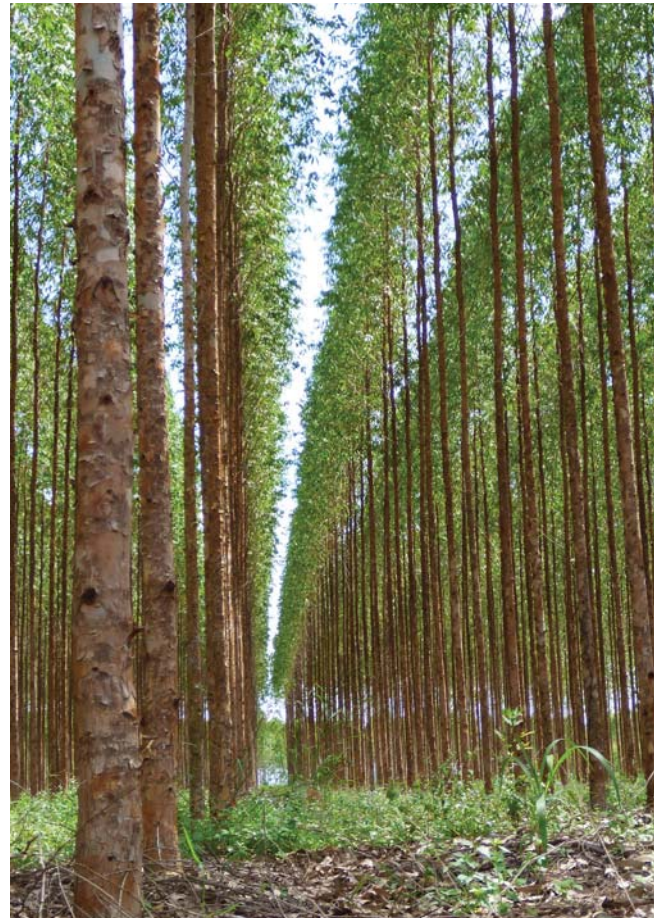
Due to changes around the globe, SCG has encountered concerns of scarce and limited natural resources. SCG has realized the value of resources management to maximize their beneficially use. SCG has therefore applied a product life cycle assessment to all SCG business units. This reflects the manufacturing efficiency and cost in products and services. Additionally, SCG has established a SCG Green Procurement Committee and procurement team of every business to support the selection of raw materials, supply materials, spare parts and general materials of good quality and being environmentally friendly. In 2012, businesses used resources effectively throughout the entire supply chain.

SCG Chemicals has a project of reusing vent gas from polymerization process as raw materials in Rayong Olefins Co., Ltd. and Map Ta Phut Olefins Co., Ltd. instead of flare combustion of Thai Polyethylene Co., Ltd. , which resulting in reduction of raw materials of more than 44,800 tons per year as well as helping in reduction of the greenhouse gas emission .

SCG Paper realized the importance of management promotion of commercial plantation based on the Forest Stewardship Council Guideline to secure wood as a raw material in order to create paper products of good quality from well managed forests with responsibility towards the society, community, and the environment. Siam Forestry Co., Ltd. applied for FSC certification under the forest project.

SCG Cement used environmentally friendly raw materials from mines applying the Semi-Open Cut Mining methods in conjunction with sustainable rehabilitation of areas to their natural condition. Also, we used waste materials from other manufacturing factories i.e., fly ash as an alternative raw material for cement production not only reduced the use of natural resources, but also helped manage industrial waste disposal.

SCG Building Materials has continuously manufactured innovative environmentally friendly products in response to consumer needs, especially recycle and reuse of waste materials, causing an the waste between companies to be used as raw materials in each respective production. As our product and service are directly used by consumers, communication has been designed to create awareness and realize the value of adopting such products; for example, COTTO: Eco Rockrete which comprises recycled materials up to 60 percent and insulation with the mixture of the recycled materials to reduce the echo for building internal use.



Eucalyptus Forest of SCG Paper has been certified by FSC to promote sustainable forest project.

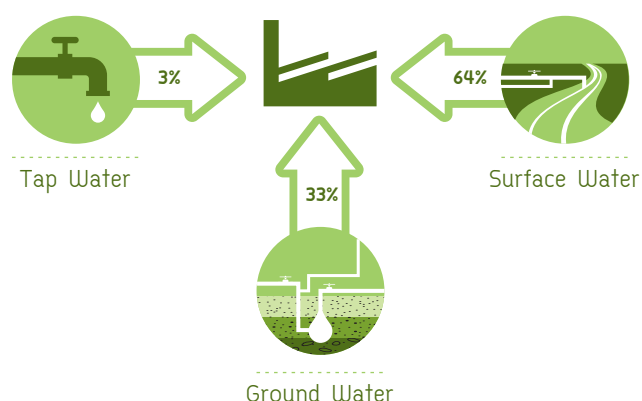
Besides the efficient use of resources in the manufacturing process, SCG awares and has further expanded this idea to suppliers, by considering 'the efficient use of resources' as part of audit, and consultation regarding the Green Procurement of general items, raw materials, supply materials and spare parts, since 2004.

Green Procurement Product Status

Category	Types	Brands	Models
Office and General Items	28	111	559
Raw Materials	13	49	87
Supply Materials	15	40	78
Spare Parts	4	11	13
Total	60	211	737
Percent Increase	25	34	52

Water Management

SCG focuses on water resource management in all work procedures covering from upstream to downstream as well as support them with plans and projects to efficiently utilize water based on the 3R principle to reduce the impacts against the environment and surrounding community, reduce the water shortage for the manufacturing process, which is deemed as an important risk to operations.



Each year, SCG brought in water from different sources both surface and ground water to use in manufacturing more than 110 million cubic meters. In 2012, SCG Chemicals and SCG Paper utilized 33 and 53 percent of SCG entire water usage and, therefore, initiated projects to reduce water use in the manufacturing process such as:

- Install a reverse osmosis system at cooling tower for Olefin and PVC plants to improve the quality of water from the manufacturing process to become adequate quality water for reusing, which resulted in a saving of 1.2 million cubic meters per year.
- Extend results of the high pressure filter to use water in the cleaning system in the paper manufacturing plant, reducing water utilization of 2.8 million cubic meters per year.
- Install water pump and treatment system to allow use of river water replacing groundwater in the paper manufacturing, which reduced ground water use of 0.6 million cubic meters per year.
- Install additional effluent pre-treatment plant to improve the quality of wastewater prior to entering the wastewater treatment system in case of emergency load and increase the efficiency of wastewater treatment system in manufacturing paper more than 15,000 cubic meters per day.

SCG emphasize the importance of supervision and improvement of the water treatment system from the manufacturing process continuously to comply with the legal standards and ensure no tampering occurs to the water source of a community. Monitoring of treated water is regularly performed through a quality measurement device.

SCG Chemicals, with its main production situated in Rayong Province, has appointed a 'Drought Taskforce' in order to monitor and follow up the water situation from water sources in Map Ta Phut and nearby areas as well as to assess the possibility and closely prepare for drought crisis situations.

SCG Paper utilizes surface and ground water with permission from related authorities for manufacturing use based on academic and technical principles of environment tampering protection as well as updates on water source situations at all times. In addition, risk management was performed by studying the use of water from other source with less affect, rather than groundwater, and retains surface water for use in drought seasons.

Although SCG utilizes water from different sources less than 5 percent of the source volume without no water source or community significant affected from the usage, SCG still conduct projects to create awareness about the importance of water resource whether in conditions of water shortage, water excess, and wastewater together with the communities and stakeholders nearby in order to restore balance of the ecology, create better life quality, and cause sustainable happiness in the society; for example, SCG Conserving Water for Tomorrow Project, Water Retention (Kaem Ling) Project, 'Rak Bung Jod' Project, and Clean Water Project of Tha Chin River; were to restore the abundance of the water sources. From past projects, it was found that the forests are more fertile, more animals return to living in the forest, the community has better water source for consumption, and has a better living due to the income from agriculture and other occupations.

Due to our systematic conduct, SCG will not be effected from water management risk and can operate continuously and sustainably without negative affects against the society and environment.

Air Quality Management

With the commitment of having clean operations for happy communities, SCG challenges its goals continuously by benchmarking with world class peers in order to employ leading edge technology for environmental management.

In addition to machinery and equipment investments to assist in improving environmental qualities from the manufacturing process to comply with or be better than the minimum standards which required by the government, monitoring of air quality has been performed, covering stack emission monitoring and ambient air quality monitoring at the community nearby and workplace air monitoring. SCG also implements an extra measurement including installation of Continuous Emission Monitoring Systems (CEMS), provision of mobile unit for air quality measuring, and environmental laboratory to monitor impacts from business operation against the environment.

Oxide of Nitrogen

Total Quality Management (TQM) and Total Productive Maintenance (TPM) are systems SCG applied to reduce cost, control quality of the manufacturing process, while continuously and properly manage the environmental impacts implemented in tasks such as efficient production planning and machinery maintenance, control and maintain a constant temperature throughout the combustion chamber to reduce the generation of oxides of nitrogen, resulting from combustion a very high-temperature or from the complete combustion with excess oxygen. As a result, SCG could reduce emission of oxide of nitrogen up to 3 percent.

Oxide of Sulfur

SCG controls the oxidation of sulfur since procurement process by controlling the sulfur content in the fuel to be used in the manufacturing process, especially fossil fuel together with the use of cutting edge technology, for example, a specialized equipment which could captures sulfur dioxide gas with slurry lime under a temperature control condition and recycle it in a form of raw material for cement production. .

Dust and Particle

In 2012, SCG reduced dust and particle emission 10 percent from dust management activities such as:

- Construction of barn to store piles of raw materials and fuel, enclosed loading system/conveyer to reduce dispersion, water spraying system for coal piling from the

receiving point, piling, as well as water spraying on canvas covered pile along handling routes regularly. Moreover, we studied wind speed and direction as well as characteristics of communities housing to setup windproof nets and plant trees around the area as buffer while ensuring pleasant scenery.

- SCG Cement has installed electrostatic precipitator and bag filter in all points of dust sources in manufacturing plants and has performed the preventive maintenance plans to ensure that the dust control equipment is efficiently operated at all times.

Volatile Organic Compounds

SCG Chemicals continuously manages Volatile Organic Compounds (VOCs) from all sources by enforcing strict standards beyond the legal standard. For stack emission, SCG Chemicals has designed environmental friendly stack and installed carbon canister prior to emit VOCs to the atmosphere. The machine is constantly inspected to ensure its usability at all times. In addition, stack emission measurements are performed in preparation prior to standard enforcement required by law. In the past year, investment made for VOCs management applied to:

- Installation of Vapor Recovery Unit to segregate hydrocarbon gas for distillation prior to recycle as raw material in the manufacturing process.
- Installation of Vapor Recovery Units (VRU) at the palaxylene storage tank to return vapor into the tank for reuse.
- The use of bacteria to eliminate hydrocarbon's odor according to Bio Tank Cleaning activities

SCG Chemicals has also formed partnerships with 'Community Partnership Association' to continually educate other companies located in Map Ta Phut Industrial Estate such as control of VOCs during maintenance and provide VOCs management manual to reduce emission to the atmosphere.

Ozone Depleting Substances

Since Thailand signed the Montreal Protocol in 1989, SCG embarked on discontinuing the use of Ozone Depleting Substances (ODS) in new products since 1998 and surveyed existing equipment and machinery that uses such substances to gradually replace them with halon-free equipment and plans to completely abandon its usage by the year 2020.

Industrial Waste Management



Lime Kiln for eliminating wastes from paper production process.

Since 2006, SCG had set its 'Zero Waste to Landfill by 2012' policy as target of industrial waste management which could result in long-term ecology impact prevention, efficient land utilization and sustainable management. All companies under SCG established plans to comply with such policy by applying 3R principles as basis of the industrial waste management practice which starts from raw material procurement, production planning and efficiency improvement to minimize waste disposal, and if waste occurs, procedures are set to avoid incineration and landfill, but to seek approaches to reuse in other industries both within and outside SCG. This is considered waste exchange across industries.

To drive waste exchange across businesses requires collaboration and exchange of knowledge and data from all parties through SCG Waste Management Committee which established since 2007. Furthermore, SCG has set knowledge and technology exchange among product R&D units in search of opportunities to reuse industrial waste or to create value added products which considered as opportunity and economical challenge for SCG.

From our commitment, in 2012, waste to be landfilled of SCG is getting close to its target with hazardous waste of only 0.3 percent and non-hazardous waste of 3.6 percent, of which are mostly sludge from wastewater treatment plant, coal ash from boiler, and insulations. SCG has jointly researched with internal and external experts in order to reuse these wastes i.e., use as alternative raw materials in the cement production instead of landfill, transporting 100 tons per year of sludge from a water

treatment plant in Nickel plating process of Siam Sanitary Fittings Co., Ltd. to convert to Nickel ingots in Germany under Basel Convention.

Examples of waste reuse are:

- Aerobic fertilization of sludge collected from wastewater treatment with nutrients adding according to relevant standard until the sludge becoming organic fertilizer under the brand of 'Khoo Din' and 'Butterfly'. This organic fertilizer has been certified by government agency.
- Installation of the Lime Kiln at Phoenix Pulp & Paper Public Company Limited and Siam Cellulose Company Limited

SCG collaborated with the Bangkok Metropolitan Administration, Crown Property Bureau, and network of private sectors in conducting Community Based Solid Waste Management (CBM) project, aimed to create awareness among communities to segregate waste from the source. SCG helped provide knowledge in waste separation into 4 types: recycled, organic, general, and hazardous waste. At present, 8 communities are participating in the project namely Onnuch 14 Rai Community, Ket Phairoh Community in Phra Khanong, Foremost Community in Samaedam, Thanam Samsen Community, Train Police Flat Community, Dindaeng Flat Community, Bor Farang Community, and Baan Bang Rakam Community in Nakhon Pathom. For future plans, the extension shall be made to 39 more communities.

Biodiversity and Ecosystem



Forest produces and community products derived from quarry rehabilitation and SCG Conserving Water for Tomorrow Project

SCG Cement and Sustainable Quarry Rehabilitation

The important factors resulting in the success of the conservation of biodiversity in the quarry area are the determination of concrete policies, preparation of the master plans and framework of quarry rehabilitation being proper for each area, collaboration from all sectors i.e., SCG's employees, business partner, experts from educational institutions, relevant authorities, and surrounding community.

In 2012, significant limestone quarry rehabilitation plans are as follows:

- **Biodiversity Relationship Data Collection and Analysis**

Thung Song quarry, in cooperation with the Faculty of Forestry, Kasetsart University, collected and studied data in regards to the perspective of the relationship in the ecosystem in order to find relationship in the food chain of wildlife and plant which was an extension of native species and techniques of quarry rehabilitation database in order to ensure that upon completion of mining, ecosystem of the forest in the limestone mountain could be restored to its original condition.

- **Quarry Rehabilitation Technique Development**

Kaeng Khoi quarry develop further technical regards to rehabilitation of mine to increase overall efficiency in procedures i.e., seeding and propagating of native species, techniques of area preparation and plantation as well as trees maintenance to increase and survival rate.

- **Capacity Building**

Practical training on forest restoration by mean of the Framework Species Method was conducted to develop skills of the rehabilitation team.

- **Biodiversity & Rehabilitation Education Center**

All limestone quarries established the 'Biodiversity & Rehabilitation Education Center' to provide opportunity for interested outsiders to visit and learn in order to extend our success cases of quarry rehabilitation to their own facilities together with the conservation of biodiversity of the country.



Biodiversity & Rehabilitation Learning Center to acknowledge community and to be a role model in quarry rehabilitation

SCG Paper and Sustainable Eucalyptus Forest Management

SCG Paper by the Siam Forest Co., Ltd. operates SCG's integrated forestry business from preparing quality seedlings, forest plantation, plantation support in the Contract Farming System as well as wood purchasing at fair price for sufficient need. To create environment awareness in forest management together with the ecological protection, restoration of the biodiversity, and improvement of life quality of the people in the community, SCG Paper complied with the guidelines of sustainable forest management based on the standard of FSC or Forest Stewardship Council since 2006.

Currently, SCG Paper is responsible for FSC certified eucalyptus forest of total 48,280 rai (3.8 percent of total eucalyptus woods used in the manufacturing process in the year 2012), located in 3 regions consisting of the Lower Part of the Northern Region, Northeastern Region, and Western Region.

Lower Part of the Northern Region: company-owned eucalyptus forest with the area of 10,000 rais located in Phran Kratai District, Kamphaengphet Province. 10 percent of the total area was reserved and certified for FSC Standard since 2007 and reassessed in 2012 for another 5 years extension.

Northeastern Region: promoted and supported farmers in Khon Kaen, Kalasin, Nongbua Lamphu and Udon Thani Province to implement sustainable forestry activities. Presently, 220 farmers were certified for FSC Standard and totaling area of 23,000 Rai.

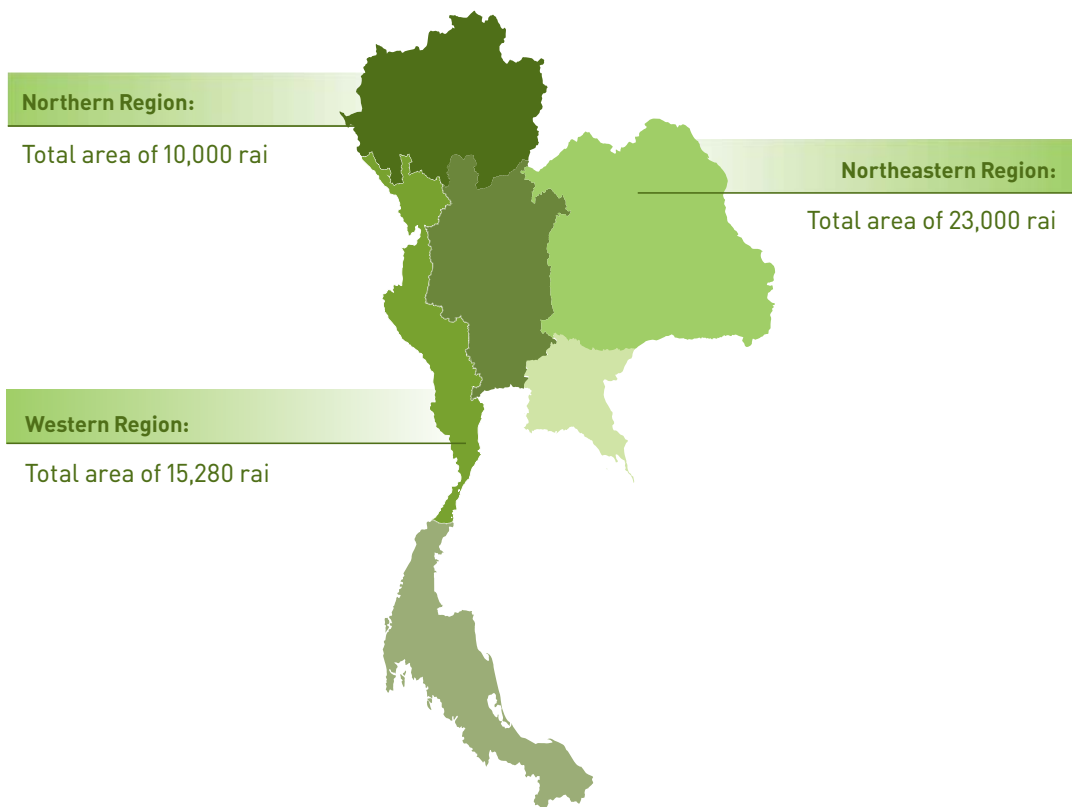
Western Region: commenced in 2010, 73 farmers in Kanchanaburi, Ratchaburi and Petchburi provinces were certified for FSC Standard with totaling area of 15,280 Rai.

In addition to the activities in eucalyptus forest areas, SCG Paper also supported communities in forest rehabilitation and conservation as well as biodiversity assessment in the forest area under the Project "Community Forest for Sustainability". At present, 9 communities are participating in the project with total area of 8,920 rai covering 3 regions based on eucalyptus forest area.



The assessment of the forest owned by farmers in Chombung District, Ratchaburi Province, by FSC Standard certifier from South Africa.

FSC Certified Forest Areas



From biodiversity survey in 2012 joint by forestry academicians with community which analyzed plant communities' profile diagram and crown cover area to assess plant communities' succession, a significant indicator of forest's future abundance, found that the supported community forests were fertile in 2 levels: semi-fertile forest and almost fertile forest. Academics recommended forest restoration and wildfire prevention, which require a certain period of time for fertile forest recovery.

145 plants and 37 wildlife species were found during the survey. None of them were listed in the IUCN Red List Species and if they were, SCG Paper shall determine a plan jointly with the community and academicians to monitor and follow up on them closely.

From 2012 biodiversity study, we found that people in the community have little knowledge regarding their regularly used local herbs. Therefore, to ensure the transfer of knowledge of herbal use to their next generations, an extensive survey of the biodiversity of herbs were commenced. In the Western Region, 23 types of herbs were available i.e., *Caesalpinia sappan* Linn. with properties to nourish heart muscles, *Maerua Siamensis* (Kuruz) Pax leaves are used for fruit ripening and charcoal could be used to make gunpowder. In addition, the data concerning biodiversity surveyed shall be used for the decision and assessment of activities; thus the people in



Fang (*Caesalpinia sappan* Linn.), herbs found in the community, heartwood when boiled helps heart nourishment.

the community can realize the importance of conserving biodiversity of the nutritional plants, herbal plants, and participatory forest management to build a sustainable community for the forest and people.

From conducting and complying with the guidelines for sustainable forest management throughout the 5-year course, the FSC Standard helps SCG business grow sustainably together with cared to a balanced and sustainable social and environment.

Green Building



Since 2010, SCG has conducted an energy saving and environmentally friendly building project as an integral part of its sustainable architecture development through design and by considering of functionality, maintenance, waste management from the construction stage down to waste management from building usage, and its landscape in order to reduce affect towards the environment throughout the building's life which reflects the purposes of green building as follows:

1. Responsibility towards the society by creating a merrily coherent atmosphere and without polluting others,
2. Promoting construction material innovation that is environmentally friendly and remain responsive to the consumers' needs of well-being,
3. Life quality improvement to employees and building occupants.

In the year 2010, SCG commenced improvement on its Head Office building at Bangsue after 25 years since its completion to become energy saving and environmentally friendly buildings according to a widely accepted standard called Leadership in Energy and Environmental Design for Existing Buildings: Operations & Maintenance of USA (LEED EB: OM). The building improvements were divided into 2 parts:

1. Architecture and building system improvement

- Improving the cooling system from its 20 years of R-11 usage, a chlorofluorocarbon cooling refrigerant. If leaks into the atmosphere, ozone layers, which help filter ultraviolet, will be depleted, and also reduce heat wave reflect back to the atmosphere results in global warming. Therefore, a change to R-123 lessens such effect up to 98 percent.
- Improving the air conditioning system based on ASHRAE 62.1-2007 standard by installing MERV 13, a high quality air filter that can filter dust, flower pollen, mould, and allergy causing substances.
- Installation of Building Automation System that could set lighting operating time, control predefined temperature and control pure air intake into the building by measuring the density of carbon dioxide. Also, it can monitor the energy consumption and water usage on each floor.
- Reducing Heat Island effect or reducing heat conduction into the building by increasing the Solar Reflectance Index (SRI) from using Elephant brand Prima series roof tiles, COTTO White Picasso Ceramic floor tiles, and CPAC paving block as well as increasing green space by turning rooftop into roof garden.

- Improving the car parking roof in front of the head office with the innovative Cerafino Solar Tile which is a hybrid roof tile combined with Polycrystalline Silicon solar cell that can produce electricity. One tile can produce electricity up to 15 watts comparably this car parking roof can produce electricity that support lighting to a whole floor of a medium sized office building.

- Improving the 1,500 square meters head office hall to support its constant exhibition function with Cylence Elephant brand Zoftone series sound absorbing panel which is made of recycled materials over 80 percent and COTTO Eco Rockrete durable floor tiles made of recycled materials over 60 percent.

- Improving the water system in the building by using unique COTTO sanitary wares and faucets which save water up to 35 percent, but still maintain cleanliness and good hygiene. In addition, treated wastewater is combined with retained rainwater to use for watering trees and plants within the head office site.

2. Building management

- Setting guidelines to purchase products, construction materials, furniture, and office supplies to be consistent with Green Procurement. Choosing products with decent standards and less natural resources utilization or less environmental impact could reduce pollution emitted from storage and disposal of material, also using local products could reduce transportation.

- Sustainably waste management from construction, furniture, office equipments, stationery from proper collection and segregation as well as returning to manufacturers for re-use, which reduce the waste to landfill or waste incineration.

- Containing the air quality within the building to lessen the dispersion and effects of dust during building improvement and construction under the SMACNA (Sheet Metal and Air Conditioning Contractors' National Association) standard.

- Reducing hazardous chemicals use within the building by avoiding hazardous chemicals for cleaning, and exterminating insects and pests.

- Promoting energy consciousness through car pooling or use of public transportation services instead of driving private cars to lower pollution and traffic around the head office.



Increase green areas with a vertical garden

- Raising awareness of reducing, energy saving, and totally environmental conservation.

SCG has been certified LEED EB: OM with the highest platinum level from the U.S. Green Building Council and was the first in ASEAN. We applied this concept of building management to other projects and extended the scope to other buildings, especially the head office building 3 and parking building that are under construction. Our aim is to certify LEED award for 'Core and Shell' with Platinum level. Also, we establish SCG eco office standard to focus on Green Activities such as deploying tele-conference technology to reduce commute, reducing printing paper use to become paperless office, and working towards Zero-waste to Landfill, and Zero-water Discharge.

Moreover, SCG extended its projects downstream the supply chain to SCG's clients by setting up 'Green Building Center' at our Home Solution as a designated place for consultation and environmentally friendly improvement advice to support the growing need of nurturing the sustainable environment from society.



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SCG Sharing the Dream Scholarship Program in ASEAN

Children and youngsters are the force that drives the nation. Education is thus essential in ensuring they will grow up to be ethical, knowledgeable and good citizens in the future. To this end, SCG has initiated SCG Sharing the Dream Scholarship to students in ASEAN countries.

For over 30 years now, SCG has granted scholarships to a number of underprivileged children in rural Thailand who lack the means and opportunities to receive a proper education. Like others, these children too have a dream to have an education. SCG readily provides the opportunity of scholarships to children who do well academically but lack the financial means to study from primary school to undergraduate degree.

As SCG has a vision to become an ASEAN Sustainable Business Leader, it has expanded SCG Sharing the Dream Scholarship program to students in other ASEAN countries. The program received assistance from sectors in each country that wish to make the children's dreams come true through the provision of scholarships to high school students who possess academic excellence, gratitude towards the parents, desire to help the family, community and society, and who are eager to further their studies yet lack the financial means. SCG also organizes the Leadership & Sharing camp to instill children the leadership skills and provide them with opportunities to make new friends through participation in joint activities. The camp is run by SCG employee volunteers acting as mentors who care for and give advice to the children about their studies and future. The program was introduced for the first time in Vietnam in 2007 before it expanded to the Philippines, Indonesia, Myanmar and Laos. The project will continue to other countries. This movement reflects the collaboration between the public and private sectors

to develop the children of ASEAN who will soon become a driving force of the region's future.

H.E. Mr. Thanatip Upatising, Ambassador Extraordinary and Plenipotentiary of the Kingdom of Thailand to Japan, one of honorable guests at SCG Sharing the Dream Scholarship program event during his assignments as Ambassador Extraordinary and Plenipotentiary of the Republic of Indonesia, said, "I was delighted to see that SCG is committed to be involved in the development of society through the provision of scholarships. The children will become quality citizens of the future playing an important part in the prosperity of their countries and other nations in ASEAN. This is one good example of how the Thai private sector can be a good citizen of Indonesia—a crucial step towards the ASEAN Economic Community in 2015 when all ASEAN nations will become one."

SCG gives approximately 5,000 scholarships a year to children in the whole of ASEAN, or 52 million baht. Aside from that, for the first time, SCG also grants continuing scholarships to foreign scholarship grantees in Vietnam to continue their studies at university level in 2010. It is fortunate that those who graduated from college have volunteered to be mentors for the next generations of scholarship grantees.

SCG Sharing the Dream Scholarship program is therefore one activity for society that helps tighten relations between Thailand and our neighboring countries. It shows the commitment of countries in the ASEAN community to develop the potential of the new generations of ASEAN citizens who are knowledgeable and ethical, a driving force that will propel the region forward towards a sustainable future.



“

This is one good example of how the Thai private sector can be a good citizen of Indonesia—a crucial step towards the ASEAN Economic Community in 2015 when all ASEAN nations will become one.

”

H.E. Mr. Thanatip Upatising

Ambassador Extraordinary and Plenipotentiary of the Kingdom of Thailand to Japan

Employee Retention

SCG joins the UN Global Compact, an international initiative with principles to promote human rights, labor, environment and anti-corruption, aiming at endorsement for the company's commitment to take good care of and improve quality of life of every employee and business partner. This is in line with SCG's business philosophy and code of conduct.

First Step: Recruitment

At SCG, we use various search and selection tools to ensure that our employees are talented and moral citizens, for instance:

- Value Test that evaluates ethics and attitude towards social responsibility,
- Competency-based Interview that ensures our employees are selected based on business needs,
- SCG Career Camp that provides participating university students an opportunity to join CSR activities or projects for the communities.

Moreover, SCG offers university students an opportunity to join SCG Excellent Internship, a program that allows students to work with SCG's businesses in the summer. Besides the hands-on experience that students obtain, they will also learn our corporate culture and business philosophy. Home Mart Career Choice is another program that provides educational opportunities for vocational diploma students in retail business management and specialty store business. The program is part of our personnel development to meet the needs of labor market.

Career Click is a program that SCG has initiated to offer our employees a chance to be considered and transferred to other internal positions. The program helps employees get a job that matches their interest and ability. Every employee is able to start the procedure directly without their supervisor's approval. In 2012, more than 260 positions were offered on the Career Click program; 524 employees had applied; over 80 employees were already confirmed for a position, while 86 were during consideration.

SCG collaborates with leading academic institutions both domestic and abroad to educate and plan career paths for graduates, as well as evaluate graduates' competency and curriculums for possible improvement.

Not only that the students with excellent academic records are entitled to receive a scholarship without obligations, they will also get a chance to participate in an ethics camp, an SCG's initiative to create a sense of social responsibility before the students enter the professional world. The initiative is aimed at supporting the youths to become talented and moral individuals and also serves as an invitation for them to work with SCG. Although talented-group employees had worked for less than 3 years accounted for the highest resignation rate, according to the exit interview conducted by the top management, the majority cited a wish to continue their education, while a small number said they were dissatisfied with their job. Thus, we developed the Career Click program to decrease resignation rate of this group of personnel.



“

Home Mart Career Choice is a program that offers opportunities not only a classroom education, but also hands-on experience at Sahasinthai in Nonthaburi province. I had a chance to meet real customers and study in upcountry, where I lived with other participants as a family. Thanks to SCG that I had the opportunity to pursue my study.

”

Suphaphorn (Nut) Singhtong

Home Mart Career Choice participant

SCG Development Courses

Level	Leadership Skill	Business Knowledge	Functional
New Employee	SCG Ready Together Program		• Business/Function Orientation
	• LDP1*: Lead Self	• ABC: Abridge Business Concept	• TQM/TPM/Safety
Supervisor	• LDP2*: Lead Team	• BCD: Business Concept Development • MBA Scholarship	• TRM/OJT • Technical Scholarship
Manager	• LDP3*: Facilitate	• MDP: Management Development Program • Ex MBA Scholarship	• TRM/Project Short Courses
Senior Executive	• EDP: Executive Development Program	• AMP: Advanced Management Program	• Overseas Seminar

* LDP: Leadership Development Program

Second Step: Development

At SCG, we assign a development syllabus for each and every employee of every level. Whether they are in operational or management level, our employees will have an opportunity to develop their potential to prepare to grow and move towards a learning organization. The curriculum is aimed at fostering leadership skill and business knowledge, which is divided into the developments of core competency, as well as functional competency, and the increase of essential basic skills that help employees of each level work more effectively. A skill mapping is also created according to competency level of each position to help employees gain adequate technical knowledge and technical skills to grow and pursue their career path. In addition, we have a program to cultivate morals and work ethics, such as Code of Conduct, Total Quality Management, Total Productive Maintenance, Workplace Safety, Environmental Management, and Innovation, to help our employees become quality 'SCG People'.

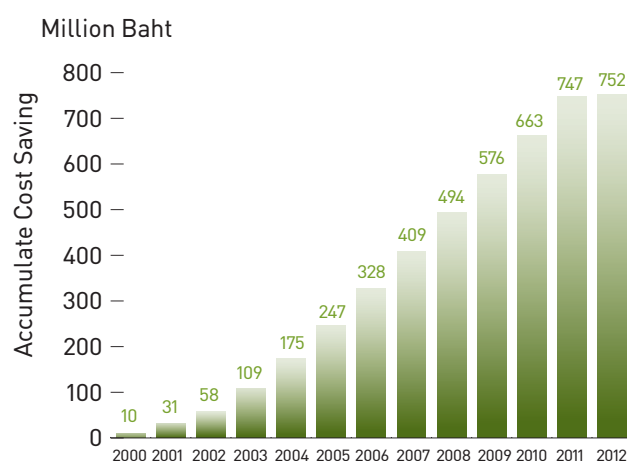
Each year, each employee will have an average of 10 training days, comprised various formats of either classroom training, on the job training, self learning, expert sharing, group learning, CoP (Community of Practice), e-learning, or project based learning. The goal of these training formats in conjunction with a knowledge management system is to disseminate and expand the knowledge of our employees at home and abroad. Knowledge sharing among peers is encouraged. In addition, effectiveness will be followed up and evaluated closely. A budget of more than 1,150 million baht has been allocated on our training and development for our employees.

Aside from training, SCG has conducted a self-development program to replenish and add the knowledge value to our employees, regardless of their work level, for instance:

Operational-Level Employees

Constructionism-based development program is aimed at improving employees' learning procedure and expanding their academic knowledge. Through this program, employees are expected to broaden their self-development, be able to work as a team and solve complicated problems efficiently. Employees are trained using their current assignment to practice solving problems and researching. Each SCG business has applied this development method.

An example is the C-ChEPS for chemical businesses. Since 2000, a total of 325 projects were initiated, of which 47 were already implemented and had helped the company save more than 752 million baht.



Supervisor-Level Employees

TQM: Operational Excellence is an SCG curriculum developed in 2007 to enhance supervisor-level employees' skills such as systematic problem solving skill using statistical tools, and managing and supervising skills. The curriculum is aimed at making employees an expert in solving problems and improving their work, which will eventually serve as a foundation to make SCG

an Operational Excellence Organization. The employees are required to implement project-based programs and to pass a test led by the Committee. At present, there are 35 graduates whose project-based problem solving skills had helped SCG save more than 365 million Baht.

- **Management-Level Employees**

The Management Development Program (MDP) is the collaboration between SCG and world-class institutes “Wharton” and “Duke”. The program is aimed at expanding advanced business knowledge of management-level employees. The employees are trained with life cases of SCG’s businesses. They are required to study the problems on site, under the guidance and coaching of advisors and professors. The trainees are also required to present, at the end of the course, their solution and ideas to the SCG Management, professors and fellow trainees.

Currently, there are 54 projects proposed, more than 10 of which were developed and have already helped SCG gain over 100 million baht. Examples include InfoZafe, a business established to eliminate confidential-documents for customers; and the improvement of distribution system, etc. In addition, program evaluations were conducted using focus group and interview methods. By asking superiors and trainees how they use what they learnt from the program, we found that over 50 percent applied the knowledge to their work.

To empower our growing number of female employees, in 2012, SCG organized “Women Leadership Forum” to share their perspectives among the country’s leading female executives in balancing work and family lives as well as to foster their confidence as the company’s female leaders. More than 60 female executives attended the forum.

To simultaneously promote the know-hows that SCG has implemented successfully, we extend them internally and externally by:

- **Internally**

We organize activities that encourage knowledge and experience sharing inside our organization including, One-Point Lesson program in plants to reduce work mistakes, knowledge / best practice sharing activities, Kaizen Day for employees to create projects and exchange knowledge with others, R&D Day for researchers to present their studies, and Innovation events to promote innovations in production, products and services, etc.

- **Externally**

SCG provides an opportunity to academic institutions, government agencies, state enterprises, and other private companies to visit us and learn our best practice and technologies evident in our production process, sustainable development, energy-saving buildings and environment management, hazardous waste management, security management, TQM and TPM. We encourage other agencies to apply what they learn to sustainably develop

our nation. Currently, SCG is in the process of establishing a dedicated responsible office to take charge of knowledge management.

Promoting SCG Code of Conduct

To promote the understanding that will lead to the implementation of SCG Code of Conduct among employees, we created communication media with contents about different simulating workplace situations with guidelines that are in line with SCG’s Code of Conduct, for example:

- Employees’ personal information must remain undisclosed to others outside the company,
- How employees can give a safety advice to colleagues or business partners when their actions are seen to be unsafe,
- Employees must decline an offer of valuables or benefits that may motivate unethical decisions,
- Employees must refrain from taking personal benefits using their positions or responsibility at SCG.

SCG promotes its code of conduct to employees through videos and newsletters to create awareness and encourage them to apply it to their daily tasks.

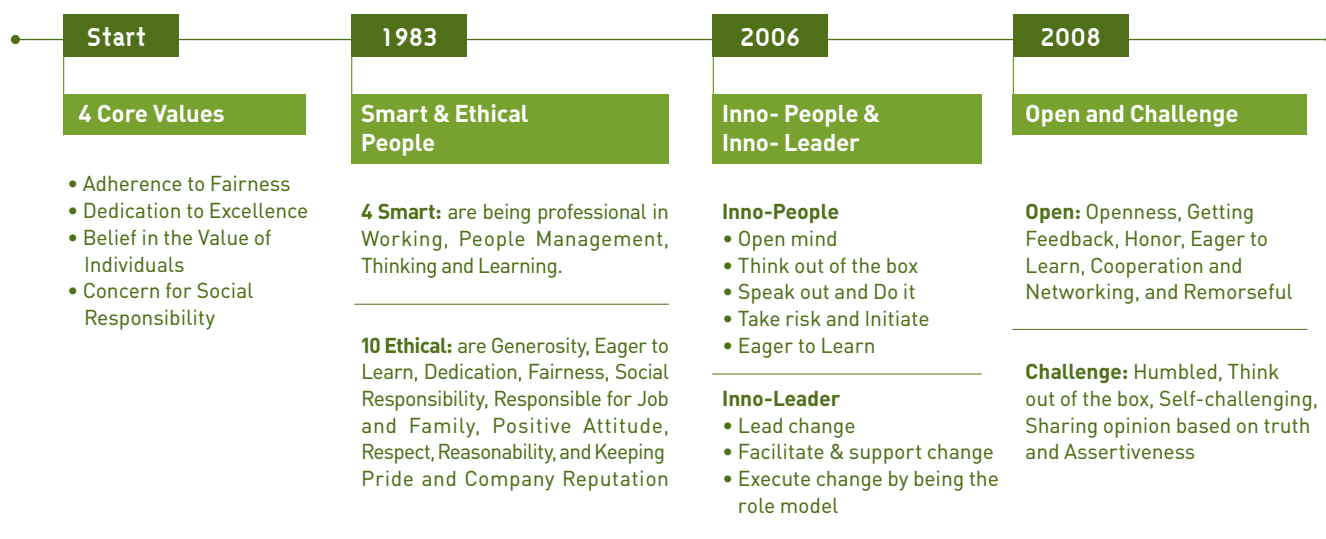


Little Janya, VDO Clip to promote SCG Code of Conduct

Next Step: Care

At SCG, not only are our employees’ development and welfare based on human rights practice, but we also take into consideration cultural and local value differences in determining a fair remuneration and benefits system for our employees and business partners, whether they are at home or abroad. Factors we consider include competitiveness in labor market, promotion plan, potential, and cost of living. The average initial wage of our employees is 40 percent higher than the minimum wage and incomes with basic benefits such as leave days,

SCG People: Principle of Corporate Culture



pensions, child support, emergency loans, money for uniforms, medical care, and travel allowances and expenses. In addition, we implement a labor and human rights guideline to comply with the law and international standard e.g. no individual under 18 years of age is allowed to work at SCG, employees are entitled to establish a labor committee or union, employees are entitled to report those who violate the code of conduct and to treat each other under the employees' freedom and rights. SCG has a Whistleblowing Policy that allows employees to make a complaint anonymously. The policy serves as a way to encourage employees to check and protect the organization's benefits. In 2012, there were 23 complaints with 3 fraud cases. Even though, all cases had insignificant lost, SCG has brought them to define prevention.

SCG has an evaluation system for both organizational and individual levels. The system starts from the evaluation of planning process, progress, development,

assessment, and fair compensation that reflects individual performance with comparison to the competitor's and other leading companies in a similar field. This ensures that we provide appropriate compensation to our employees. Moreover, we offer our employees an annual year-end counseling, in which a committee will evaluate employees' performance, behavior, and awareness about the company's regulation and code of conduct, in order to assist them to improve in their work.

To get ready for personnel management tasks at our facilities in foreign countries that differ in terms of customs and culture, SCG has created a Post-Merger Integration Playbook based on human rights principles, with an aim to facilitate the integration of employees of different cultures, laws, and social values; help employees unite and work more effectively, and lessen business risks.

Human Resources Management Abroad

SCG has organized a public relations campaign to raise awareness about SCG businesses among ASEAN citizens. We offer university students from each ASEAN country a chance to work with SCG through programs such as SCG Campus Roadshow, Informative Session, and job fairs with leading universities in Vietnam, Indonesia, and the Philippines.

We also develop a syllabus entitled, "SCG Go Regional Program" in preparation to train our foreign and Thai employees who are stationed abroad. The syllabus is aimed at improving employees' competency to work in foreign countries. It covers topics such as Mobility, Humanagement, and Entreprenprofessional, which are integrated with the practice of Overseas Assignment. As for foreign-national employees, we have launched 'HR Leaders Learn & Share Program' for our Indonesian employees. The program encourages them to apply knowledge to their work through Project Assignment. Besides learning about a different culture, employees will have a better understanding and be more confident in personnel management.

Health and Safety



Well-being and safety of employees and contractors is one of the risks that SCG recognizes and stresses its importance. We determine to create a sustainable safety culture and meet SCG's goal of Injury & Illness Free.

To ensure that employees and contractors understand and aware of our health and safety practices, they are trained on their first day at work to recognize the safety issue, receive personal protective equipment and learn the basic safety in each business. Employees who work in the production process will properly learn, before beginning their job, the principle of risk assessment, prevention, and appropriate control measures.

All supervisors and managers will be trained in the "Safety Officer at Supervisor Level" course, and the "Safety Officer at Executive Level" course, respectively. They will also learn how to observe the work safe practices. Employees of all levels are encouraged to constantly participate in the workplace safety precaution and seriously implemented. Work safety targets (Lagging KPIs) and accident prevention targets (Leading KPIs) are set to make sure every employee and contractor can work together safely. Lost time accidents that occur will be reported to high-level executives and to the SCG Sustainable Development Committee every quarter. Then the executives and committee members will analyze and find a solution to prevent repetition.

Felt Leadership

Felt Leadership is an SCG's initiative that aims to create understanding among senior management on roles and responsibilities of safety leadership and guide them to become a role model for employees. SCG has disseminated the safety culture to all its businesses and to

employees of all levels by encouraging employees to practice Safety Observation, Personal Safety Action Plan, and Positive Coaching & Communication. The effort is to encourage participation towards safety in the workplace. Felt Leadership initiative also allows the management to become aware of the problem beforehand and fix it, which will help lessen risks and accidents in sustainable way. The initiative is being introduced to our contractors as well.

Safety Performance Assessment Program (SPAP)

SCG initiated the Safety Performance Assessment Program in 2006 by outlining the SCG Safety Framework for each business to implement in order to meet the international health and safety standard. In 2012, the Committee revised the content of the program to make it up-to-date and cover recent changes which was then introduced to each business in June 2012 and will conduct the assessment at each business according to the revised framework. SCG also planned to implement the framework in SCG's businesses abroad.

This is to ensure safety for our employees and contractors as well as demonstrate that SCG emphasizes on building sustainable safety culture.

SCG Contractor Safety Certification System: SCS

The SCS has been developed to enhance the capabilities of contractors in managing their own safety as well as to urge them to take part in ensuring safety for every worker. SCG provides guidance and technical supports and conducts an assessment of their safety management system. In 2012, all of 633 contractors, representing more than 20,000 workers, were certified.

Safety Transportation

SCG is determined to make our product transportation as safe as possible to others on the road. As a result, we have initiated several projects that include Professional Driver program and Safety Driving Course in order to achieve zero accident, improve quality of service and taking care of the drivers as our family member to always be safe.

Our campaign to lessen accidents caused by ready-mixed concrete trucks has been continuously developed and improved. The campaign focuses on defensive driving training as well as a rewarding system for good drivers, implemented through “Three Goodness” program: Good Safe Driving, Good-Condition Truck, and Good Service. As a result, the number of accidents caused by ready-mixed concrete trucks has decreased continuously.

Industrial Hygiene Management System

SCG Chemicals, in conjunction with the Faculty of Public Health, Mahidol University, has developed an Industrial Hygiene Management System that is practical and can yield effectiveness. The system helps integrate the science of industrial hygiene with occupational health and explores into the analysis and evaluation level of health risk factors by connecting to the employees’ and contractors’ health examination results. This will lead to a comprehensive standard for controlling and preventing work-related disease and illness.

After the first phase, SCG Chemicals has set a policy scope and responsibilities of its personnel in each level and created a manual on Industrial Hygiene Management System. Phase two, which is due to begin in early 2013, will be piloted in five companies with an aim to become an Injury & Illness Free organization.

SCG Chemicals Plant Process Safety Management Audits

Following the severe accident in Map Ta Phut Industrial Area that damaged and generated concerns in the surrounding communities, SCG Chemicals has sponsored an expert from AcuTech Consulting Group to evaluate the Process Safety Management System and conduct the Quantitative Risk Analysis for worse case scenarios to improve its production process, evaluation system, and emergency readiness; as well as to train its employees. The evaluation process has started in November 2012.

SCG hopes that this project will raise safety standard and reinforce community confident which finally leads to sustainable engagement.



C-Home Services Safety Guideline

Roofing is one of the services that SCG Building Materials developed to meet our customers’ needs. To make roofing solution service easier and more convenient, SCG Building Materials has developed new equipment and work process that takes into account the highest safety for our workers, who may be in dangers of falling or touching high-voltage electricity at construction sites. The new work standards have been implemented, which covers procedures of permission to do risk-involved tasks, site survey, fall protection equipment, use of single ladders, differentstyle roof installations, high-voltage electricity protection equipment. These work standards are added in a hiring contract to assure customers and homeowners that they will receive a safe, quick, and quality service.



Safety e-Learning Media

To promote work safety awareness to new employees and contractors, especially those who work at high-risk places, SCG created an animation media, using real life situations and case studies to demonstrate safety in the workplace. The media comprises of six lessons e.g. pre-work preparation, use of personal protective equipment, working with machines, working at height, working with electricity and working in a confined space. Each lesson comes with a test to help learners review and evaluate their knowledge before performing the actual work. SCG hopes that this learning media will create positive perceptions on workplace safety and decrease accident rate among employees and contractors.

Commitment of Business Unit Presidents



Cholanat Yanaranop



Our work culture is uncompromising to work injuries.



Roongrote Rangsiyopash



We are strict on safety because our employees are the company's most valuable resource.



Pramote Techasupatkul



- **Observation always check and observe**
- **Together support each other**
- **Think Safety safety as the first priority**
- **Caring take care of each other**



Pichit Maipoom



We must take care of each other as our own family member, treating one another with a kind heart, wish them safe, and work happily.

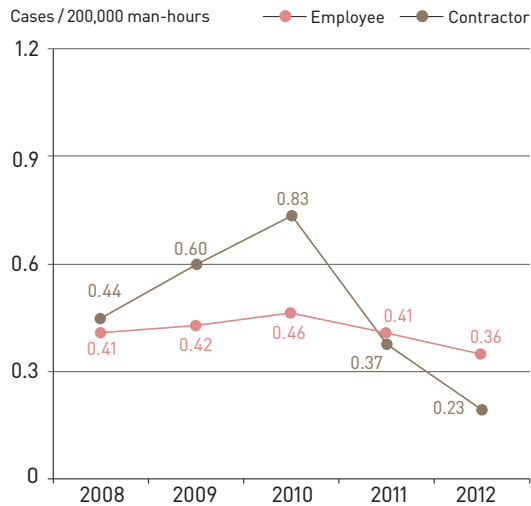


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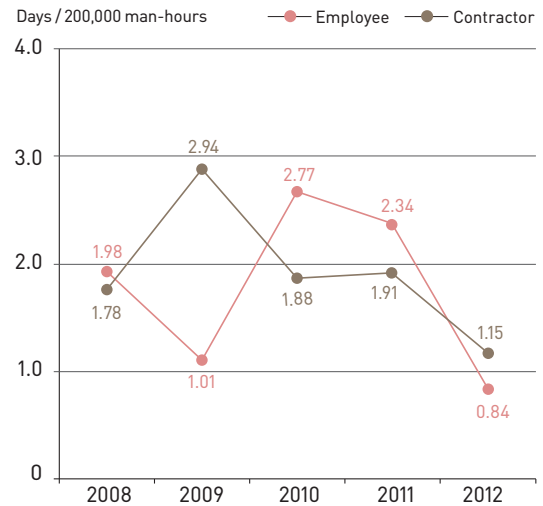


Every driver is a valuable member of SCG Logistics. All trainings and guidelines are offered based on our care for their safety. Please cooperate to ensure safety for us all.

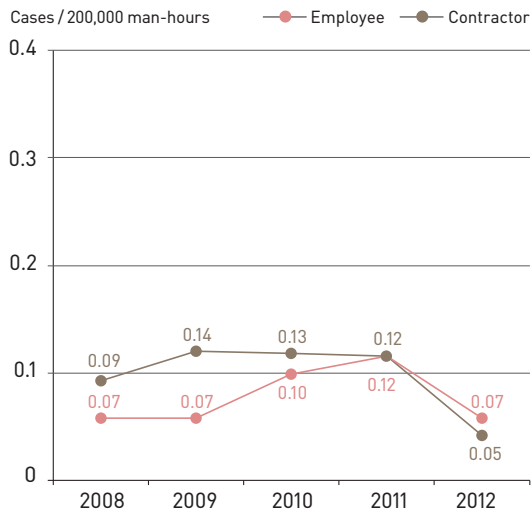
Total Incident Rate



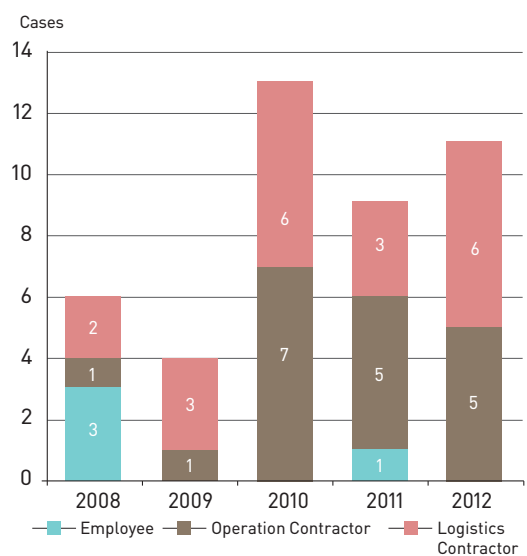
Severity Rate



Incident Rate (Lost Time Cases)



Number of Fatalities



Accident Statistics

As a result of ongoing safety programs, in 2012, lost time accident rate of employees and contractors had been continuously decreased, in line with no lost time accident rate. According to the cause analysis of all the accident cases and near miss, the main cause stemmed from the negligent to follow the standard procedures. Especially,

11 fatal accident cases still occurred in 2012; therefore, the solutions to this remain to create safety behaviors among employees and contractors, to design and control the system strictly in accordance with the Process Safety Management, and to create awareness on safety driving.

Social and Community Development



SCG carries out business with ethics and fairness to all concerned parties and adherence to social responsibility in line with its business philosophy that has long been upheld and passed on from one generation to another. To achieve the goals, the Company is committed to creating sustainable development in the ASEAN region and every community where SCG operates.

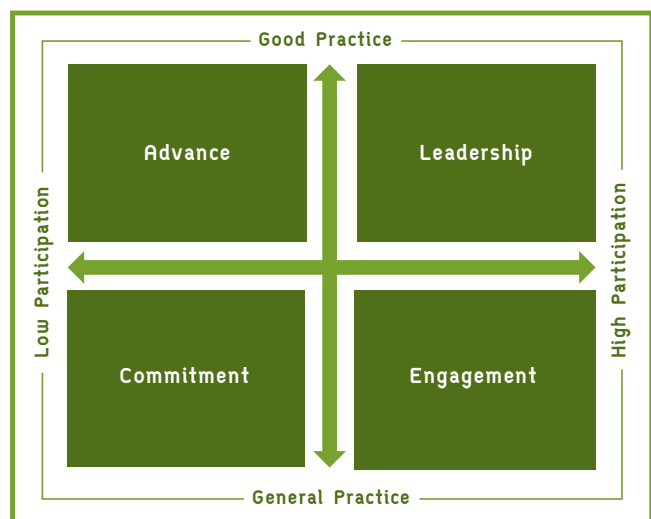
SCG has established the CSR Committee for Sustainable Development comprising delegates from the Board of Directors and the Management. The Committee is in charge of defining policy and operating guidelines for sustainable development and social responsibility. The focuses are on raising the quality of life along with developing the country's potential in different areas and supporting projects related to the Company's sustainable development scheme, namely, the Green Business and Green Community initiatives. At the same time, each business unit under the supervision of the Sustainable Development Committee, which also comprises the President of each business unit, is responsible for taking care of society, environment, and communities surrounding the plants to ensure a good quality of life and sustainable growth alongside their businesses. Apart from the CSR Committee for Sustainable Development and the Sustainable Development Committee, SCG

Foundation is another arm dedicated to carrying out activities benefiting society with the focus on programs and activities in the areas of education and human development. The Foundation provides opportunities for youths and the disadvantaged of all ages and sexes to gain more access to education and potential development in different dimensions.

Throughout the past century, SCG has conducted numerous benevolent activities that address the real needs of society and has engaged employees in initiating a diverse range of activities. A string of community dialogues are arranged where community members are given opportunities to voice their opinions and concerns. The efforts allow SCG to develop and expand its activities to enable the communities to become strongly self-reliant, develop the potential and quality of people, as well as contribute to a sustainable environment.

The inception of SCG's social activities have been similar to that of other organizations—starting with charity donations and developing into community involvement in creating new activities that will truly benefit society. The knowledge and expertise of the Company has been incorporated with the potential of the community, thus enabling the communities to develop themselves sustainably. Based on past experience, SCG divided its social activities into four types: Leadership, Advance, Engagement, and Commitment, contingent on the practices and SCG's participation. This allows for the defining of specific strategies for each type of project to achieve different objectives which include the needs to strengthen society as a whole.

Diagram of Social Activities categorized by Project Practices and Participation



Social Activities according to Participation and Practices

Leadership Group	Role model programs that SCG initiates and drives the implementation to accomplish as determination in order to be able to expand the concepts to other organizations.	<ul style="list-style-type: none"> • SCG Conserving Water for Tomorrow Project • Innovative Technological for the Restoration of Saline Land Project • Community Partnership Initiative at Map Ta Phut in Rayong and Cement Partnership Initiative in Saraburi • ASEAN Sustainable Development Symposium
Advance Group	Good practices that SCG promotes or participates to build capacity of individuals in various aspects, requiring knowledge, expertise, and specific experiences.	<ul style="list-style-type: none"> • SCG Thailand Rescue Robot Championship & SCG Thailand Robot@Home Championship • The Young Thai Artist Award • The Tales in the Garden Festival
Engagement Group	Programs that SCG promotes and takes part to help enhance the quality level or capacity building in various areas.	<ul style="list-style-type: none"> • SCG Sharing the Dream Scholarship • SCG Sci-Camp • SCG Badminton Academy • The SCG Employee Volunteer Camp • Home Solution Career Choice • SCG Sharing the Dream Playground, Vietnam • Green Dream Project, Vietnam
Commitment Group	Programs that SCG supports social activities to enhance quality of life or to mitigate afflictions through other well-accepted in social benefit activity management organizations or the underprivileged directly.	<ul style="list-style-type: none"> • My School...Flood Fight Preparedness • Supporting Charitable and Philanthropic Organizations • Renovation of schools and The Children's Day in Vietnam • Supporting of Emergency Room of Calmette Hospital, Cambodia

1. Leadership Group

These projects are SCG initiatives by which the Company gets involved with the community in socially-beneficial activities at every step—starting from the analysis of problems, planning and implementation. This total involvement has resulted in the success of the projects. Furthermore, each step of the process is evaluated so that the problems and obstacles can be used to improve the efficiency. At the same time, SCG welcomes new information and knowledge from related agencies both in the public and private sectors as well as the community, society and the media. The evaluation has found that Leadership Projects are in line with SCG's sustainable development scheme, and can serve as models to be implemented and expanded by other organizations. Some major projects include:

SCG Conserving Water for Tomorrow Project

Water is an essential resource for human being yet problems of water resource have intensified regarding water quantity and water quality, for example, water shortage, floods, water pollution. At present, there is no

organization in the private sector to take seriously and continually role in taking care of water management; SCG is therefore committed to playing a crucial role in water conservation so as to be a role model for other To this end, the Company has duly and continuously His Majesty the King's initiative about water management.

Due to the forest fire in drought season at the cement plant in Lampang province and the vicinity in 2003, SCG organized a study trip and took local residents to the Huay Hongkrai Royal Development Study Center, and joined hands with communities to build check dams using natural materials such as bamboo, soil, rocks, and sand. The Company also gave the community the opportunity to brainstorm ways to solve water problems themselves based on the check dam building process designed to not only have the communities build check dams, but also to instill awareness of water conservation and treatment. The success of the project can be seen from the construction of over 51,898 check dams by over 45,000 participants.



SCG employees joined hands with communities to construct check dam achieving 51,898 units over target of 50,000 units for the celebration of 100th year anniversary in 2013.

Apart from that, the process of check dam building has been disseminated to other communities so that they can join hands in brainstorming, analyzing, solving problems and being able to rely on themselves. The project also helps create jobs which leads to a better standard of living, as can be seen from the following:

A lush and more fertile ecosystem: Apart from retaining water and creating watershed areas, resulting in flora and fauna diversity, the number of forest fires has decreased. The communities have sufficient water for consumption in drought season through the local irrigation and there are no incidents of flooding in the rainy season. As can be seen in 2011, whereas other surrounding villages were destroyed by the flooding disaster, Sasophok Community in Amphoe Jae Hom, and many other communities in Amphoe Mae Tha in Lampang province did not suffer from severe flooding as the check dams helped to slow the flow of surface run off.

A better living and new jobs in the community: With the forest being restored, indigenous plants and other wildlife have returned to their natural habitats. The forest can thus be compared to a supermarket of forest produces which helps create additional income. Housewives make a living by agriculture and home stay businesses to visitors who come to learn about nature and environment conservation. The communities also set up their own cooperatives. To ensure that they will have enough water for consumption throughout the year, the communities have laid pipelines from the water source created by check dams and thus created a mountain water system. At the same time, Ban Samkha community in Lampang province has taken it a step further and set up a community enterprise with the establishment of a power plant. The electricity produced is used for consumption

within the community, and the surplus is sold to nearby communities.

Stronger communities: Once a community has self sufficiency, the locals who left to find work elsewhere will return to their hometown and lead a sufficient life, coexisting with nature sustainably and peacefully. Four such communities are Ban Samkha, Ban Donfai, Ban Phamaew in Amphoe Mae Tha and Ban Sasobhok in Amphoe Jae Hom, Lampang province. Two learning centers have been set up to transfer a sustainable concept of water conservation in Mae Jang Basin Learning Center and Ban Samkha, Amphoe Mae Tha, Lampang province, and Ban Sasobhok Learning Center in Amphoe Jae Hom, Lampang province. Apart from that, networks of water conservation communities have been set up in over 35 villages in provinces such as Lampang, Chiang Mai, Prae, Nan, Saraburi, Kanchanaburi, Ratchaburi, Nakhon Si Thammarat, Khon Kaen and Rayong provinces. SCG has also joined hands with Bang Prok community in Pathum Thani province in treating polluted water using EM fertilizers and grease trap.

In Rayong province, over 4,600 check dams have been built so far in Khao Yai Da area, resulting in lush forest areas that help absorb carbon dioxide and reduce global warming. At the same time, communities have enough water for agriculture and accordingly get higher yields. SCG Chemicals, therefore, joined Khao Yai Da, Rayong province in setting up an eco-tourism club providing home stay business, orchards visits and sightseeing on bicycles. This eco-tourism industry helps communities to earn more income and improve the quality of life of the people while they can continue to live in harmony sustainably with nature.

Innovative Technological for the Restoration of Saline Land Project

According to the research, agriculture on saline land give less yields to farmers each year and farmers suffered on ongoing deficit which leads to poverty. Therefore, in 2008, SCG, in conjunction with the National Center for Genetic Engineering and Biotechnology and other government and private agencies, came up with a plan to help rehabilitate saline areas in the northeastern region of Thailand so that farmers can grow rice and other crops.

For this reason, SCG has embarked on supporting R&D project to develop strains of rice that are tolerant to land salinity. The Company has also worked closely with soil doctors, who are the local wise men, and introduced techniques to plant other economic crop farming such as eucalyptus, rubber plant, mushrooms and other vegetables with rice growing. This effort has generated extra income for farmers and made profits from their cultivation. Also, four training centers for rehabilitation of saline land have been set up in Udon Thani, Sakon Nakhon, Khon Kaen and Nakhon Ratchasima provinces. These prototype centers allow farmers to exchange knowledge and learn how to solve soil salinity problems. Rice mills have been set up in Ban Pong Soong, Udon Thani and Ban Nong Kwang in Sakon Nakhon. Groups of farmers have also been set up in the form of community enterprises for self-development to create more jobs, sidelines and extra income by producing organic compost, EM liquid fertilizers, processed agricultural produce and cloth weaving.

Having driven by a sincere commitment to build strong communities, there are currently 250 families of farmers participating in the project on an area of 10,000 rai and cover over 40,000 rai via word of mouth among the farmers. SCG aims to disseminate the knowledge on saline land rehabilitation to vast area by collaborating with the Land Development Department, Department of Mineral Resources and Bank for Agriculture and Agricultural Cooperatives and accessible media. This project can be a prototype to develop agricultural society in Thailand so that farmers can grow plants efficiently, providing a long-term solution to the chronic poverty problems and add value to farming product with brand building.

Community Partnership Association in Map Ta Phut, Rayong and Cement Partnership Initiative in Saraburi

SCG, in hands with PTT Public Company Limited, BCP Power Co.,Ltd, Dow Chemical Thailand and Glow Group has set up Community Partnership Initiative in Map Ta Phut, Rayong province. This is the first collaboration of Thai entrepreneurs in developing towards a green, environmentally-friendly industry with the focus on the participation of the community in managing the



environment. The aim is also to improve the quality of life for the people in the community so that Map Ta Phut Industrial Estate will become a prototype of an Eco Industrial Town. In line with the concept of mutual assistance, factories with better bodies of knowledge and experience will share what they know with other factories so they too will be up to the standard. In addition, public health, education and other needs of the community have been addressed with projects such as an industrial hygiene management system pilot model project, university admission tutorial project, scholarships to study nursing, and a mobile medical unit for the community.

Thanks to its strong and solid operations in 2012, more seven companies have joined the Initiative as members. These companies comprise Vinythai PLC., Bangkok Synthetics Co., Ltd., Bangkok Industrial Gas Co., Ltd., Padaeng Industry PLC., ABB Co., Ltd., Linde (Thailand) PLC., and PTT Phenol Co., Ltd. This will strengthen the network of strong communities and environmental management in the long term.

The aforementioned success has led to the setup of Cement Partnership Initiative—a collaboration between cement manufacturers in Saraburi province, namely SCG Cement, Thai Cement Manufacturers Association and Siam City Cement PLC. to promote good practice in the development of a cement manufacturing industry that is environmentally friendly and sustainable to the communities.

SCG and its network will improve the standards of their operations and encourage other companies to become members, and provide knowledge and exchange work experience that can ensure the highest standard of operational safety. Other socially-beneficial activities address educational, public health, and environmental issues that reflect the true needs of the community. SCG also offers 'open house' events where the communities can visit its plants.

The Community Waste Management Project

Alternative energy to which SCG has long given importance, coupled with over 40,000 tons of trash generated in the country each day has inspired SCG with the idea to use household waste as alternative energy in



SCG as a role model in sustainable development has transferred the SD concept and encouraged other organizations to adopt that will create a balance to the world.

its cement production process. Based on the concept of the 3R (Reduce, Reuse/Recycle, Replenish), the Community Waste Management project was initiated to fully utilize household waste with the goal of engaging the communities in reducing waste, thereby, decreasing the number of community landfills and leading to a zero waste community. Moreover, some sorted waste can be used as refused derived fuel (RDF) in the manufacturing process. In 2012, over 3,500 tons of RDF from waste sorting at six pilot communities in Bangkok, communities surrounding the cement plants, and Doi Saket Municipal Waste Sorting Plant in Chiang Mai were reused for alternative energy. The endeavor signaled a good start in line with SCG's sustainable development approach focusing on conducting business with concern for maximizing natural resource efficiency (Green Business) and promoting participatory involvement of the community in environmental conservation (Green Community).

ASEAN Sustainable Development Symposium

Sustainable development based on a balance between economic, social and environmental dimensions in line with the principles of corporate governance is a concept that has received much attention and been adopted as guidelines by businesses worldwide. This concept offers a kind of development that responds to the needs of today's people while at the same time causes no negative impacts on the needs of future generations. The private sector thus has a crucial role in propelling this concept to concrete application on a wider scale. For instance, the World Business Council for Sustainable Development has been set up by a group of world-class business people who conduct their business in accordance with the sustainable development concept.

Realizing the private sector's responsibility and crucial role in solving economic, social and environmental problems in accordance with the sustainable development

principle, SCG has organized a national conference 'Thailand Sustainable Development Symposium' since 2011 to transfer the concept of sustainable business operations. This effort has resulted in a network of cooperation from all parties involved in improving the country's sustainable development.

The success of the project is the result of cooperation from all sectors in society—the public sector, the private sector, the community, educational institutions and those responsible for sustainable development, especially executives of small and medium-sized organizations who play a crucial role in the quest towards the implementation of the sustainable development concept in their business. Therefore, in 2012, SCG upgraded its symposium from national symposium to involve the whole of ASEAN – ASEAN Sustainable Development Symposium.

As Sector Leader in Building Materials & Fixtures for two consecutive years and the first in ASEAN, SCG will continue to disseminate sustainable development principles and encourage other organizations to adopt them in their operations so as to build economic growth with sustainable care for society and environment in ASEAN in the years to come.

2. Advance Group

SCG has initiated and acted as major supporter of various human empowerment projects. These projects are overseen by various agencies as they require field specific know-how, expertise, and experience. The projects, once completed, can be expanded further. They include the following:

SCG Thailand Rescue Robot Championship and SCG Thailand Robot@Home Championship

Since 2004, SCG, the Thai Robotics Society and other educational institutions have held the SCG Thailand Rescue Robot Championship every year. The event serves

as a platform where students can develop their skills in developing rescue robots. The winner receives a trophy from the H.R.H. Princess Maha Chakri Sirindhorn and participates in World RoboCup Rescue competition. Representatives from Thailand have won the award for the 6th consecutive year, thus bringing fame and pride to the nation. These achievements show that Thai youths are as skilled and capable as their counterparts from other more technologically-developed countries. This championship also helps improve the world standards of the rescue robot competition. Government agencies such as the Ministry of Defense, can apply the rescue robot technology for use in the army.

In 2011, SCG started to organize the first SCG Thailand Robot@Home Championship in Thailand. The goal was to promote the development of more technologically developed robots that can interact with humans, providing services and assistance in the home as well as assistance for the sick or disabled. The winner represents Thailand in World RoboCup: Robot@Home competition.

For 2012, the representative team of Thailand got the second runner up and the Best Mobility Award from World RoboCup Rescue at Mexico, ranked the eleventh in World RoboCup:Robot@Home.

SCG is striving to improve the competition standards in the country in terms of regulations; competition formats as well as robot technology, so that representatives from Thailand can develop their potential to compete in the world arena. At the same time, the Company will push for cooperation among educational institutions and other agencies in developing robots that can be used in both industrial and household settings.

Young Thai Artist Award

SCG, in collaboration with educational institutions and renowned artists in various fields, has held the largest national young artist competition since 2006. This is an opportunity where young artists can produce artwork in 6

categories: Two-dimensional Art, Three-dimensional Art, Photography, Film, Literature, and Music Composition. This aims to encourage youths to create artistic work for public and for society to learn to appreciate the value of art.

Over the past seven years, more than 5,700 art pieces of young artists have been submitted in 2012, those who won the competition were taken on an educational field trip to broaden their view of art in Spain. Those who entered in the short film category also had their work reviewed and commented upon by experts in the field so they could take on board those comments and create more quality work in the future.

The stringent criteria is set by SCG Foundation with help from a committee consisting of national artists, leading artists and other experts, so that new generation Thai artists are encouraged to create artwork extensively. Exhibitions, film critiques and collection of literary work which the Company grafts on to showcase their art pieces, are ways that these young artists can be inspired to create greater work while society will be made aware of the value of art and artwork of Thai artists being on par with international standards.

The Tales in the Garden Festival

Early child (under age 6) is the best time to promote children's development and lay the solid foundations in various areas. This can happen when the brain receives proper and on-going stimulants. SCG Foundation thus has joined organizations that work with children and youths such as the Books for Children's Foundation in organizing the Tales in the Garden festival since 2004. The program aims at encouraging parents to promote child development through tales and picture books to widely and sustainably create a culture of early child development through books in Thai society. The event was held at Lumpini Park and Vachira Benjatas (Railway Park) in Bangkok. In 2011, the festival was held in Chaing Mai for the second consecutive year. SCG Foundation also joined with





SCG Paper in holding 'Tales in the Paper Garden Festival' at the Queen Sirikit National Convention Center. The aim of the festival was to promote the use of picture books to boost children's creativity and imagination.

Moreover, in 2012, SCG Foundation selected world class picture books that have been recognized worldwide by educational academia and creators of children's books worldwide as being both informative and artistically beautiful. These books are suitable for reading to children at an early child (under age 6). Five more tales have been published in the Thai language, namely, Animal Mothers, The Three Billy Goats Gruff, Time Flies, The House in the Night and The Biggest Bear. Parents and those close to very young children can use picture books as tools in boosting their physical, mental, and intellectual preparedness. SCG Foundation also donated sets of these books and bookshelves to the Children Hospital and Young Children's Development Centers nationwide.

Over the nine years, a great number of parents and children have taken part in the festival and received tips on child-rearing and how to choose books for children from child psychiatrists. The project instills the love of reading habit among the children and fosters a sustainable culture of early child development through books in Thai society.

3. Engagement Group

The majority of projects that have been initiated and participated by SCG are programs that elevate quality of life or boost the potential and abilities in areas such as education, sport and environment. Some of these projects are:

SCG Sharing the Dream Scholarship Program

One of SCG's philosophy is Belief in the Value of the Individual as human resources are valuable to help propel the nation forwards. Children and youths will be a major driving force in the development of quality society in the years to come. SCG has therefore offered educational

opportunities so that children will grow up to be smart and ethical, using their knowledge to develop society. To this end, the Company has for over 25 years now, offered the scholarships to children and youths in Thailand who demonstrate financial need, good behavior, and strong determination in pursuance of their studies from primary school to a bachelor's degree.

The ongoing effort in Thailand has provided children a chance to study at higher levels, and to have a better living and future. Realizing that education is a crucial foundation to enhance children and youths' potential, SCG, together with government sector, public sector, communities and other agencies have now expanded the project to include other ASEAN countries. Under this program, SCG has provided scholarships to high school students with gratefulness who lack the means but have the desire and enthusiasm to further their studies. The project, started in Vietnam in 2007, has now expanded to the Philippines, Indonesia, Myanmar and Laos, respectively. To this end, the Company has offered more than 5,000 scholarships worth 52 million baht to students in ASEAN.

To instill leadership skills in the scholarship grantees as well as provide them with up-to-date knowledge, SCG has organized the Leadership & Sharing Camp, where specialists and academia in childcare are invited to provide consultation on how to make the best of their learning years. The camp provide opportunity for scholarship grantees to meet new friends through participation in various activities. SCG also encourages its employees to volunteer as mentors in the camp and follow up on the students' learning results

SCG has also fulfilled the dreams of scholarship grantees by providing them opportunities to study at undergraduate level. To provide moral support in their quest in obtaining higher education, scholarships are offered to the scholarship recipients who are accepted to university. Likewise, to show SCG's appreciation, teachers who have dedicated themselves in support of their



students' learning are granted the Distinguished Teacher Award.

SCG is unwavering in its commitment to continue to provide better lives to children and the youths through the granting of scholarships. The Company has a plan to expand the program to other countries and develop the forms of aids to suit the needs of children and the youths in each country.

SCG Sci-Camp

Science, technology and innovation make for a solid foundation for the development of the country. Therefore, SCG, together with The Science Society of Thailand Under the Patronage of His Majesty the King and universities, has organized camps for junior high school students to instill in them positive attitudes towards the learning of science, technology and the environment which will lead to the creation of innovations for a better quality of life and environment through scientific process of observation, analysis and experiment.

The project has been held for the 23rd year. Up until now, over 2,300 students have participated. After they have finished, they will further their study in the area of science and technology and become scientists in the future. SCG has incorporated new, up-to-date and comprehensive content which is then presented by experts in each subject area.

SCG Badminton Academy

SCG Badminton Academy was established in 2007 to promote and nurture the skills and capabilities of young Thai badminton players to achieve sporting excellence on par with international standards for the first time in Thailand.

At present, a total of 30 badminton players aged between 12-19 years old are in the program. They have been encouraged to participate in tournaments at all levels—national, ASEAN regional as well as world tournaments. In 2012, many major awards were won such as Men's Singles from Tangkas Alfamart Junior Challenge Open Badminton Championships in Indonesia, and Men's Singles from Singapore International Series 2012 in Singapore. The athletes also participated in the Olympics



Games in London, England.

For over 30 years, SCG has provided constant and continual support for young budding badminton players and organized all levels of tournaments from junior tournament (SCG Junior Badminton Championships), national tournament (SCG All Thailand Badminton Championships), and international tournament (SCG Thailand Open Badminton Championships) and will continue to support young Thai badminton players to become national players so they can go on to win international awards and fame for the country.

Volunteer Activities by SCG Employees

SCG has invited its employees to volunteer and take part in socially-beneficial activities that serve the needs of the communities. These projects include:

The SCG Employee Volunteer Club

As there is a growing need for more classes to cater for the basic need for education of children in the remote areas of Thailand, SCG employees have sacrificed their annual leaves to volunteer to build one school building and restroom per year. The school, selected from a pool of primary schools under the Office of the Basic Education Commission, receives financial support and managerial skills from SCG Foundation as well as building materials donated by SCG subsidiaries.

The project is now in its 31st year of operation and 26 school buildings have been constructed, 2 repaired and 2 rainwater collection tanks and 2 infirmaries built. In 2012, a 4-classroom, 6-restroom, one-story school building was built for Wat Sri Samosorn in Gudchok District, Amphoe Nong Ma Mong, Chai Nat province.

Sharing Opportunities, Drawing the Future Program

SCG Foundation has introduced a new dimension of social work by inviting their employees to form groups of three and submit a proposal of socially-beneficial projects to be implemented in areas nationwide. Over the past six years, 13,000 volunteers from SCG have taken part in over 850 projects which have fostered collaboration and strengthened the ties between SCG employees and the communities.

In 2012, over 2,000 volunteers from SCG took part in 142 projects worth 12.3 million baht - socially beneficial nationwide, creating happiness and smiles throughout the country.

One Cell One Project (OCOP)

This project, initiated by SCG Cement, opens up opportunities for employees in each function or 'cell' to jointly organize a socially-beneficial project for the communities surrounding the plant. Initially, the focus was on the development of the educational system such as the renovation of school buildings and libraries and school lunch programs, and later the projects extended to address other issues including professional development, public health care, religion, etc.

To date, over 200 projects have been carried out, including an educational development project, school and library construction, occupational training for housewives, organic farming, school and educational development project, waste-free school project, and biogas production from food waste projects. Other projects include the project to maintain and repair community religious places and public properties such as bus shelters, village water supply plants, news transmission towers as well as reforestation and check dam construction projects.

Following the success of these projects, the Company will continue to encourage its employees to be involved in socially-beneficial activities as SCG's employees and the communities will have the opportunity to learn to develop themselves as they work alongside each other, listening to each other's opinions which can then be used to improve their operations. At the same time, the communities are empowered to improve their quality of life, which ultimately leads to self-reliance.

Home Solution Career Choice

To promote occupational performance for manpower in the construction market, SCG Building Materials has organized a bilateral project which includes the curriculum for High Vocational Certificate majoring in construction science and construction techniques (full service home solution). The focus is on the study of theory and internship at technical colleges and training centers. Participants receive allowances such as accommodation, travel expense and per diem during the apprenticeship. Upon graduation, they will receive a high Vocational Certificate accredited by the Ministry of Education and a chance to work as full-time employees at SCG Building Materials as technical service officers at Home Solution Service Center.

This project helps to develop the skills and ability of learners in business circles while at the same time increasing the potential of learners so they will be ready for a more demanding labor market.



SCG Sharing the Dream Playground in Hoang Van Thu Park, Ho Chi Minh City

SCG Sharing the Dream Playground, Vietnam

Recognizing the importance of a family unit as fundamental to the development of children and youths, SCG has joined hands with Vietnamese public agencies in a project to build SCG Sharing the Dream Playground in Hoang Van Thu Park in Tan Binh district of Ho Chi Minh City. Here children can play on equipment that helps develop their physical well-being in a place where the whole family can spend time together.

The 820-square meter playground is divided into five zones for children aged 4-11 years old. The equipment is made from the high quality materials of SCG. The place is frequented all year round by children and it is the venue where SCG organizes its annual children's day. There is a plan to build another playground for kids at Binh Duong province in Vietnam.

Green Dream Project, Vietnam

SCG, in cooperation with Muc Tim, a leading teen magazine in Vietnam, has organized a project to create environmental conservation awareness among youths in Vietnam. The project aims at encouraging children and youths to be aware of the need for environmental conservation through dissemination of articles on the topic of environmental conservation and accept youth representatives to serve as Green Dream Ambassadors who will take part in pilot activities in which they get to express their opinions and make suggestions regarding ways people can help preserve the environment in everyday life and go on field trips to learn about environmental management at various sites such as Vina Kraft Paper factory of SCG Paper and the Water Utility Production Plant in Ho Chi Minh City. This group of youngsters will be transferring the concept of environmental conservation to their family, other students, and society.



Children's Day and Scholarship granting ceremony, Vietnam.

4. Commitment Group

There are also projects that SCG has taken a smaller role in, but instead provided support through social activities undertaken by charitable foundations and organizations, government agencies, educational institutions and other specialized institutions that are recognized for their commitment and capability to manage charitable public activities that help increase the potential of the individuals in society and alleviate social problems. The following are examples of such projects:

My School...Flood-Fight Preparedness Project

SCG Foundation offers financial assistance to schools damaged from the floods. The schools can ask for a flood relief budget to repair the damage caused by the floods or to prepare for other preventive measures. The projects that have been approved will receive no more than 200,000 baht. In 2011, 163 school projects were reviewed and approved.

Supporting Charitable and Philanthropic Organizations

SCG provide financial donations to foundations and charitable organizations every year so that the financial aid is used to assist the underprivileged in the society in achieving a better quality of life and enabling them to rely on themselves. The Company also gives support to activities aiming at developing the individuals in society.

In 2012, a total of 106 million baht financial support was given to 66 foundations and charitable organizations for use in their activities for the public benefit. This effort has helped alleviate the government's burden to improve the standards of living of the underprivileged in society as well as reduce social problems.

Renovation of Schools and Children's Day Activities, Vietnam

In 2009, SCG initiated a project to renovate a Disabled Children's Training School in Ba Ria-Vung Tau Province, Vietnam, and since 2011 the company has continued its support by organizing children's day, giving out scholarships to school children as well as upgrading the school internet system. SCG also plans to continue to organize children's day activities at the school every year.

Renovation of the Emergency Room at Calmette Hospital, Cambodia

SCG provided financial support of approximately 500,000 baht for the renovation of the emergency room and donated medical equipment to Calmette Hospital in Phnom Penh, Cambodia. The hospital is a public hospital that provides medical care to about 500 out-patients a day and is equipped with 300 beds for in-patients from various areas in the country, most of whom have low incomes.



SCG Foundation was established in 1963 and was registered as a foundation in 1967. The foundation was officially proclaimed as a public charitable organization in 1992. SCG Foundation is known as one of the early private Corporate Foundations in Thailand which intends of conducting business with responsibilities and continually creating social benefits into five areas:

1. Early child development through books
2. Educational promotion and support
3. Youth's special talents promotion
4. Creating social awareness
5. Sustainable community development and emergency relief

Road to Sustainability





- The Environmental Conservation and Safety Committee
- Environmental Conservation Policy

1995

- SCG Environmental Indicator Standards

1996

- SCG Code of Conduct (1st Revision)
- ISO 14001 Certificate for Environmental Management System

1997



- The Audit Committee
- Green Label

1998



- The Donations Committee
- SCG Corporate Governance Handbook
- Safety Performance Assessment Program (SPAP)
- Sustainability Report

2003



- Sustainability Leader: Member of Dow Jones Sustainability Indexes (DJSI) World in the Sector of Building Materials & Fixtures
- SCG Code of Conduct (3rd Revision)
- Guidelines for Green Procurement
- Sustainability Report

2004



- Silver Class in the Sector of Building Materials & Fixtures from SAM/DJSI
- SCG Code of Conduct (4th Revision)
- SCG and Business Operation following the Principles of Sufficiency Economy
- SCG Vision
- SCG Contractor Safety Certification System (SCS)
- SCG Safety Framework
- SCG Distribution's Recycle Handbook
- Sustainability Report

2007



- Gold Class in the Sector of Building Materials & Fixtures from SAM/DJSI
- The Forest Stewardship Council (FSC)
- Grease Tap and Bio-organic Liquid Handbook
- Risk Management Guidelines
- SCG Sustainable Development Guidelines
- Code of Conduct regarding SCG Information Disclosure
- Whistleblower Policy
- SCG Safety Framework (1st Revision)
- Sustainable Development Week
- The 2nd Community Satisfaction Survey
- Sustainability Report

2008



- Sector Leader and Gold Class in Building Materials & Fixtures from SAM/DJSI
- Green Happiness on the Salinity Land Handbook
- Repairing Homes to Bring Back Happiness Handbook
- Home Repairing After Flood Handbook & DVD
- SCG Model: Lessons Learned from the Flood Crisis Handbook
- ISO 50001 Certificate for Energy Management System
- The 3rd Community Satisfaction Survey
- Sustainability Report

2011

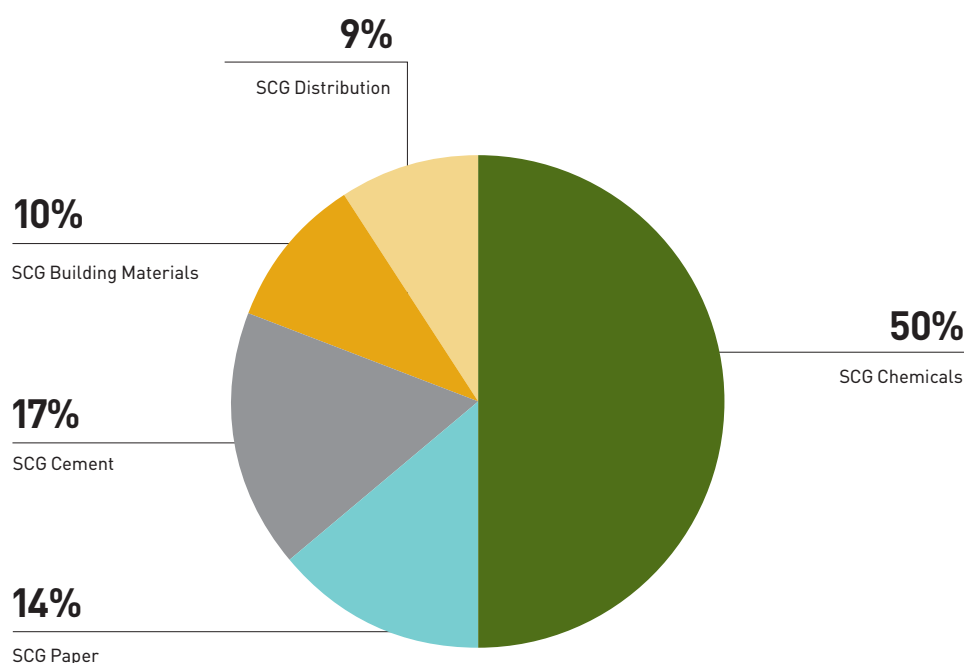


- Sector Leader and Gold Class in Building Materials & Fixtures from RobecoSAM/DJSI
- LEED EB:OM Platinum, 1st certified building in ASEAN from the U.S. Green Building Council (USGBC)
- Sustainability Report
- Green Building Products Handbook

2012

Sustainability Performance Data 2008-2012

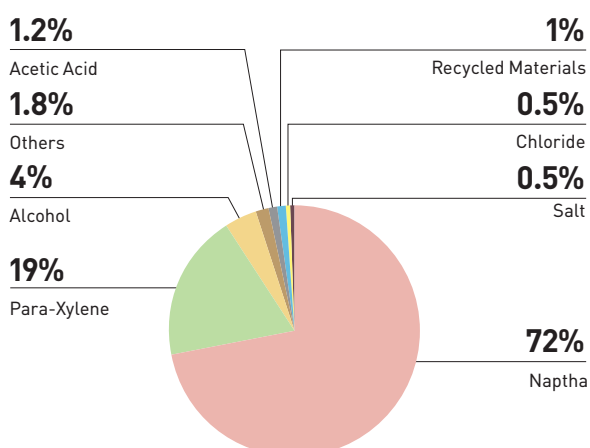
Revenue from Sales 2012



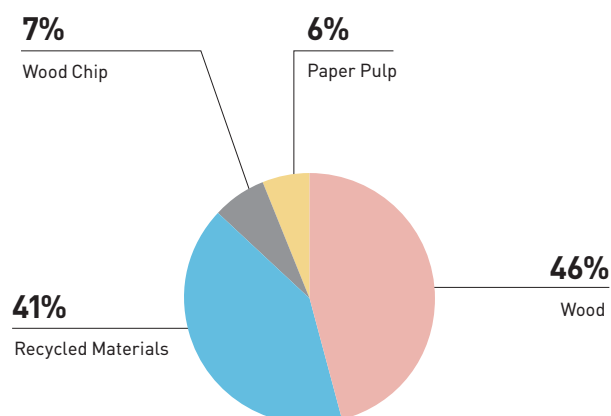
Performance Data	2008	2009	2010	2011	2012	GRI
Economic Performance						
Revenue from sales (Billion Baht)	293.2	238.7	301.3	368.6	407.6	EC1
Profit for the year (Billion Baht)	16.8	24.3	37.4	27.3	23.6	EC1
EBITDA (Billion Baht)	38.8	47.1	45.9	46.3	45.7	EC1
Benefits to employees comprising salary, wage, welfare and regular contributions (Million Baht)	17,010	18,903	21,270	23,997	27,361	EC1
Dividend to shareholders (Million Baht)	9,000	10,200	15,000	15,000	13,200	EC1
Interest and financial expenses to lender (Million Baht)	6,089	5,649	4,670	6,048	6,321	EC1
Taxes to government and local government authorities such as income tax, local maintenance tax, property tax and other specific taxes (Million Baht)	4,583	5,047	13,045	8,190	5,567	EC1
Privilege tax and others from investment promotion, and research and development (Million Baht)	573	904	1,187	1,734	1,277	EC4
Investments and expenditures regarding community development, social infrastructure and environment (Million Baht)	450	331	480	712	563	EC1
Environmental expenditures (Million Baht)	832	854	1,146	1,741	1,964	EN30

Performance Data	2008	2009	2010	2011	2012	GRI
Environment Performance						
Production (Thousand Tons)	28,761	29,036	32,168	34,784	37,702	
Raw Materials (Thousand Tons)	35,165	37,337	38,413	41,078	45,822	EN1
SCG Chemicals	2,410	2,530	2,379	3,858	4,503	
SCG Paper	1,420	2,003	3,222	3,250	3,113	
SCG Cement	28,475	29,514	29,532	29,668	33,206	
SCG Building Materials	2,860	3,290	3,280	4,302	5,000	
Recycled Materials (Thousand Tons)	1,753	2,011	1,623	1,612	1,567	EN2
SCG Chemicals	-	-	11	6	45	
SCG Paper	1,440	1,438	1,156	1,211	1,266	
SCG Cement	304	560	445	381	241	
SCG Building Materials	9	13	11	14	15	

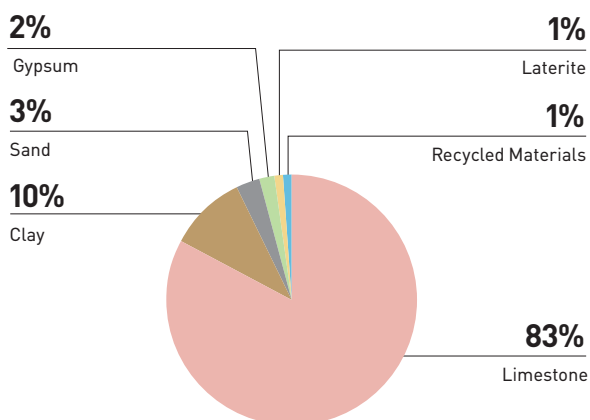
SCG Chemicals



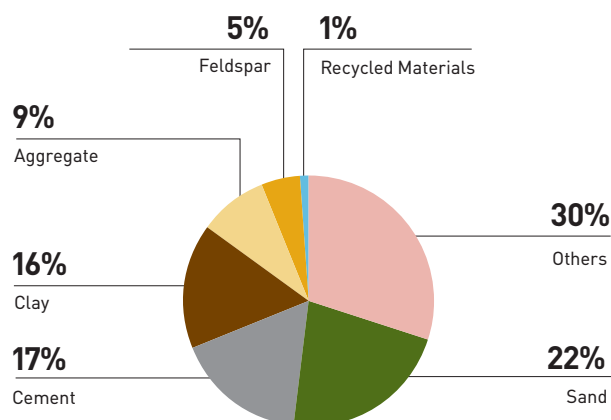
SCG Paper



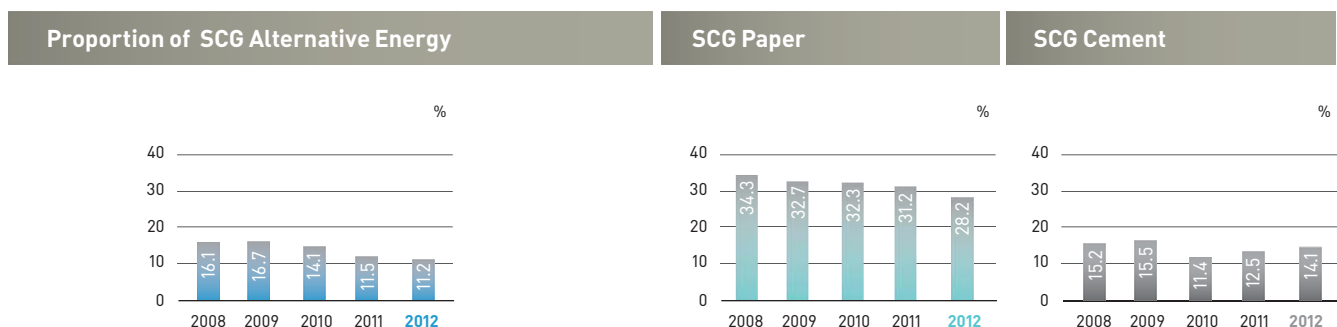
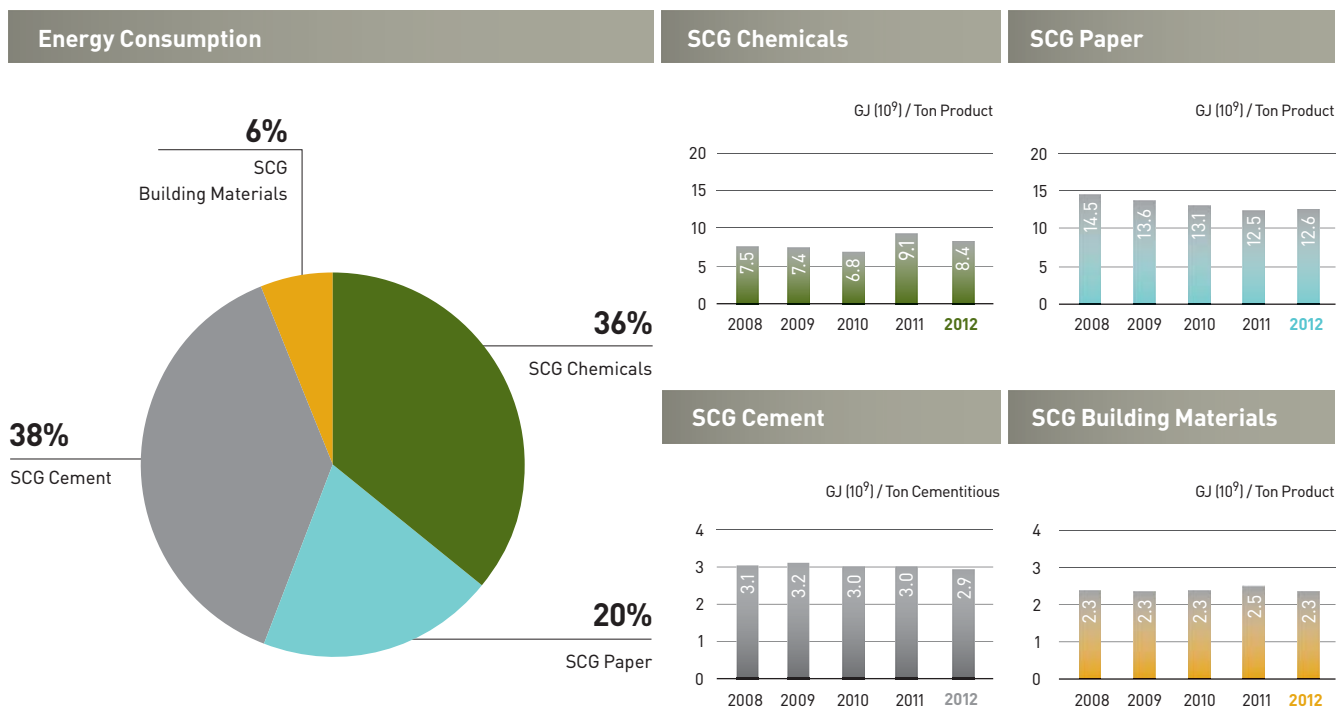
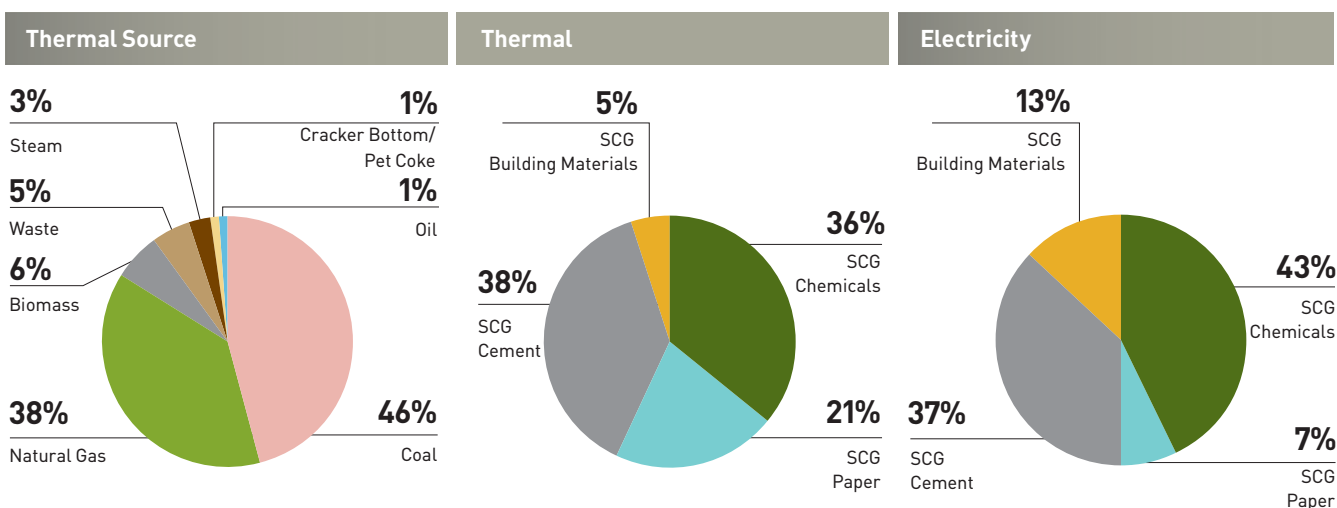
SCG Cement



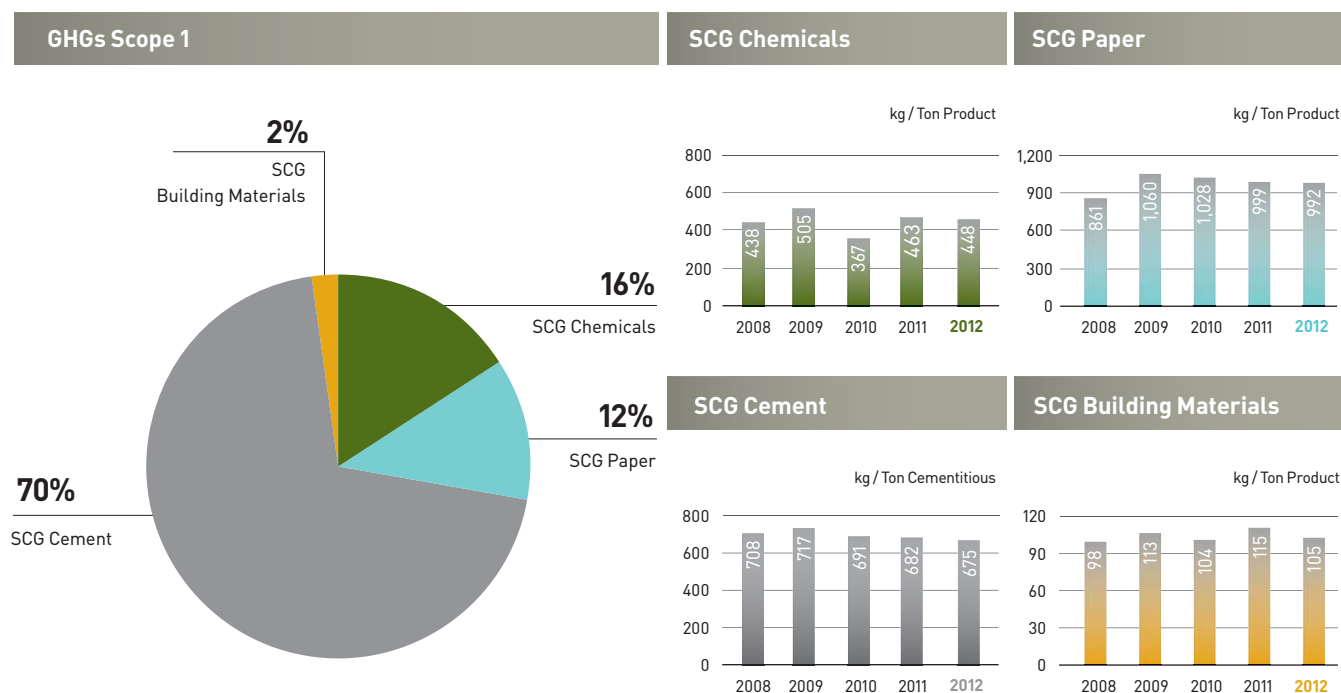
SCG Building Materials



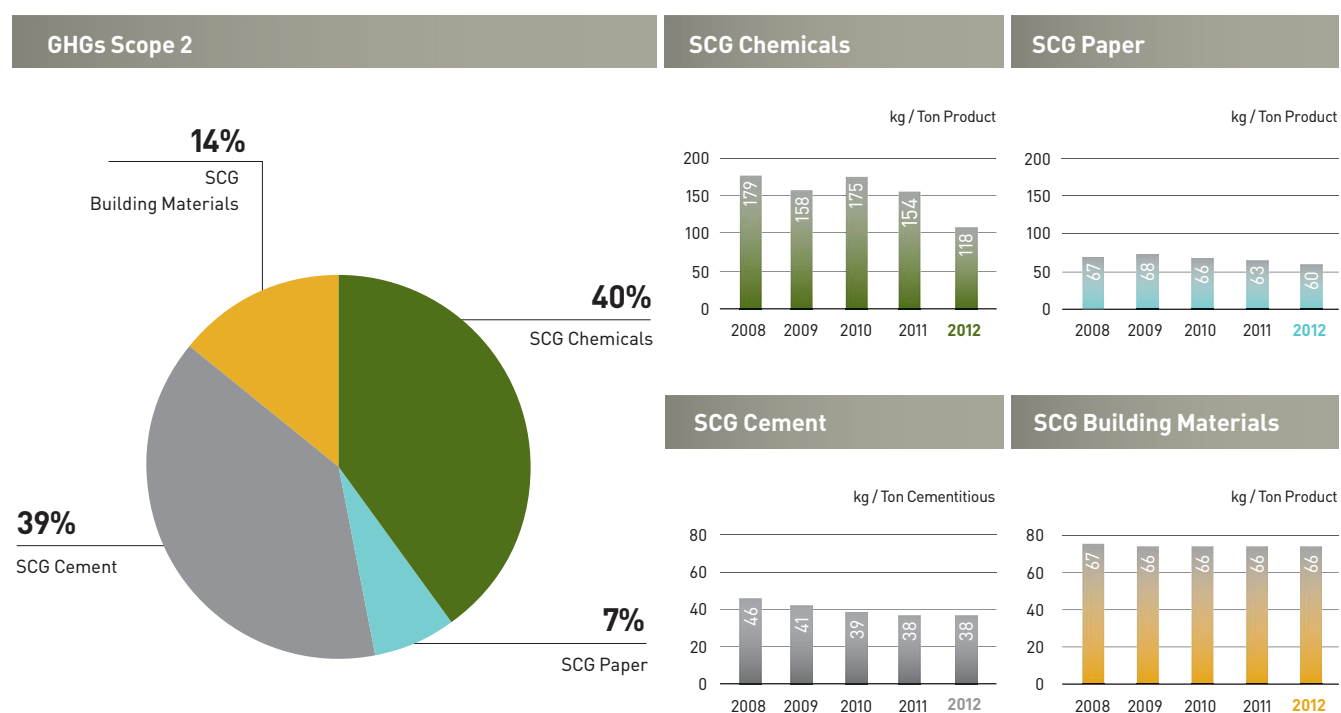
Performance Data	2008	2009	2010	2011	2012	GRI
Total Energy Consumption [Petajoules]	135.50	135.49	140.68	167.68	174.58	EN3
Thermal Consumption [Petajoules]	122.98	123.77	128.30	153.65	159.70	EN3
Alternative Energy Consumption [Petajoules]						EN3
Biomass	8.93	8.84	7.31	9.10	9.86	
Industrial Waste	11.74	10.90	10.71	8.78	8.35	
Electrical Consumption [Million kilowatt hours]	3,478	3,254	3,441	3,895	4,133	EN4



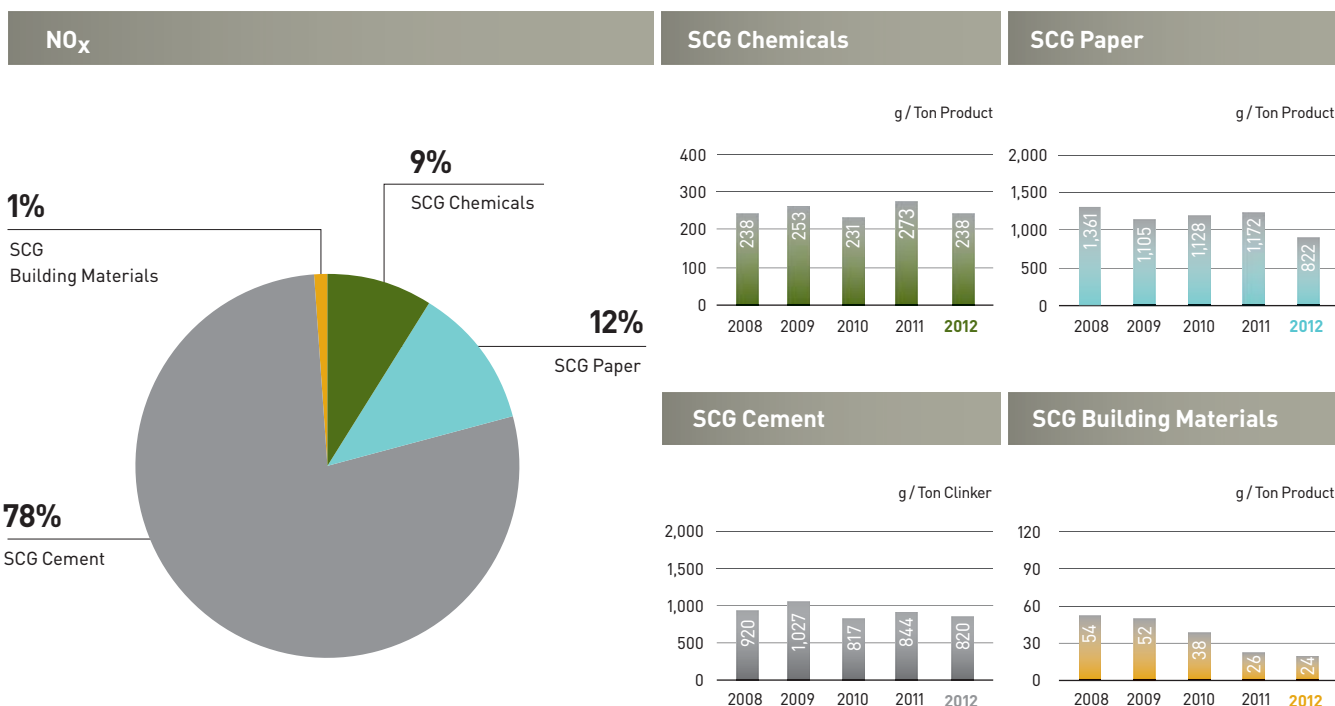
Performance Data	2008	2009	2010	2011	2012	GRI
GHGs Scope 1 [Million Tons]	17.87	18.92	19.66	20.73	21.96	EN16



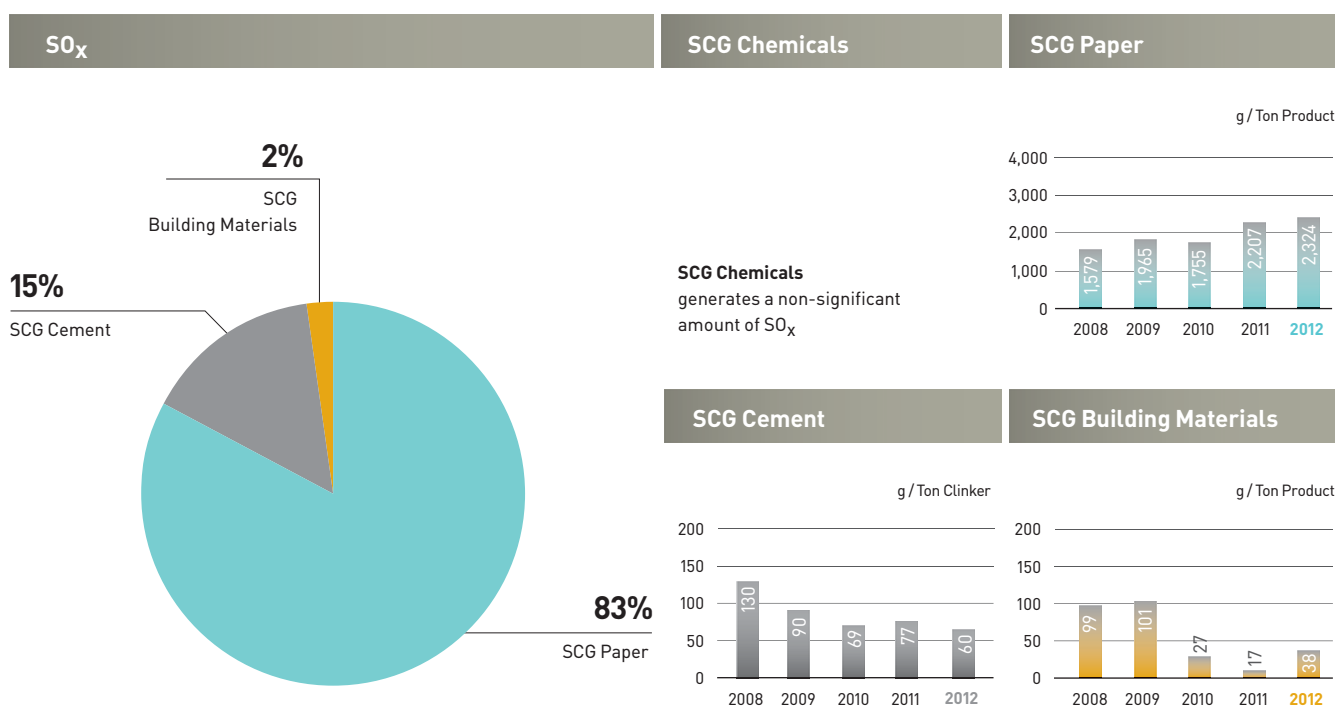
Performance Data	2008	2009	2010	2011	2012	GRI
GHGs Scope 2 (Million Tons)	2.23	1.86	2.09	2.27	2.23	EN16



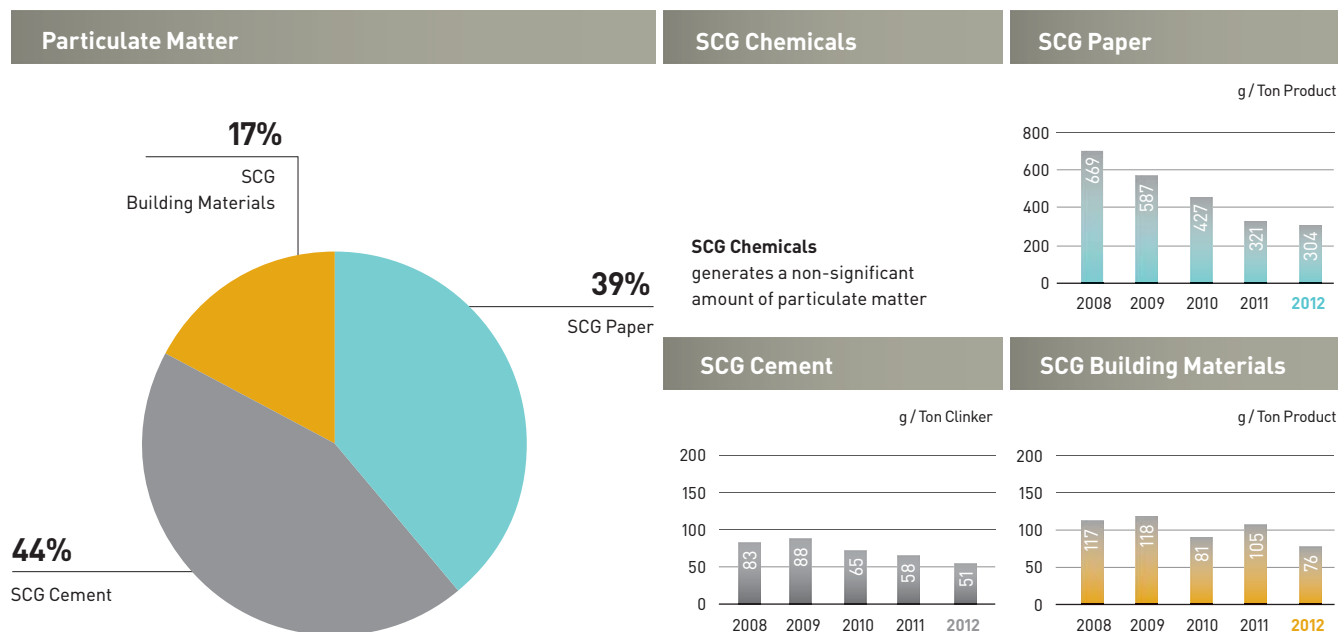
Performance Data	2008	2009	2010	2011	2012	GRI
Oxides of Nitrogen [Thousand Tons]	20.09	21.27	18.92	20.02	19.45	EN20



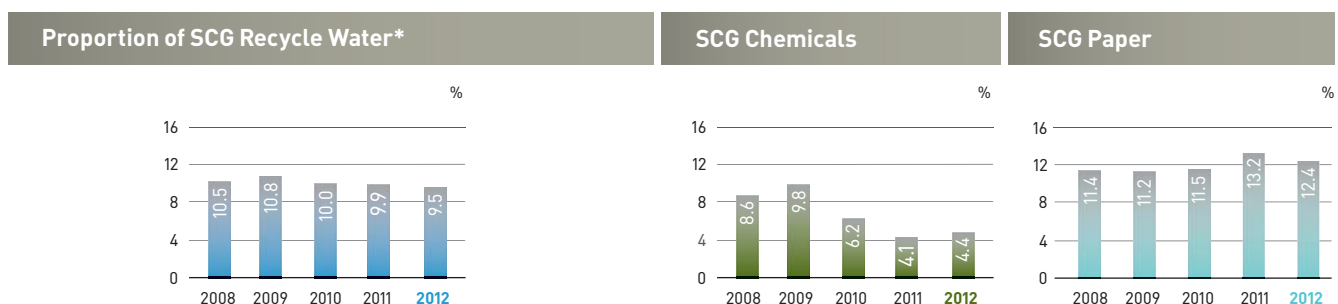
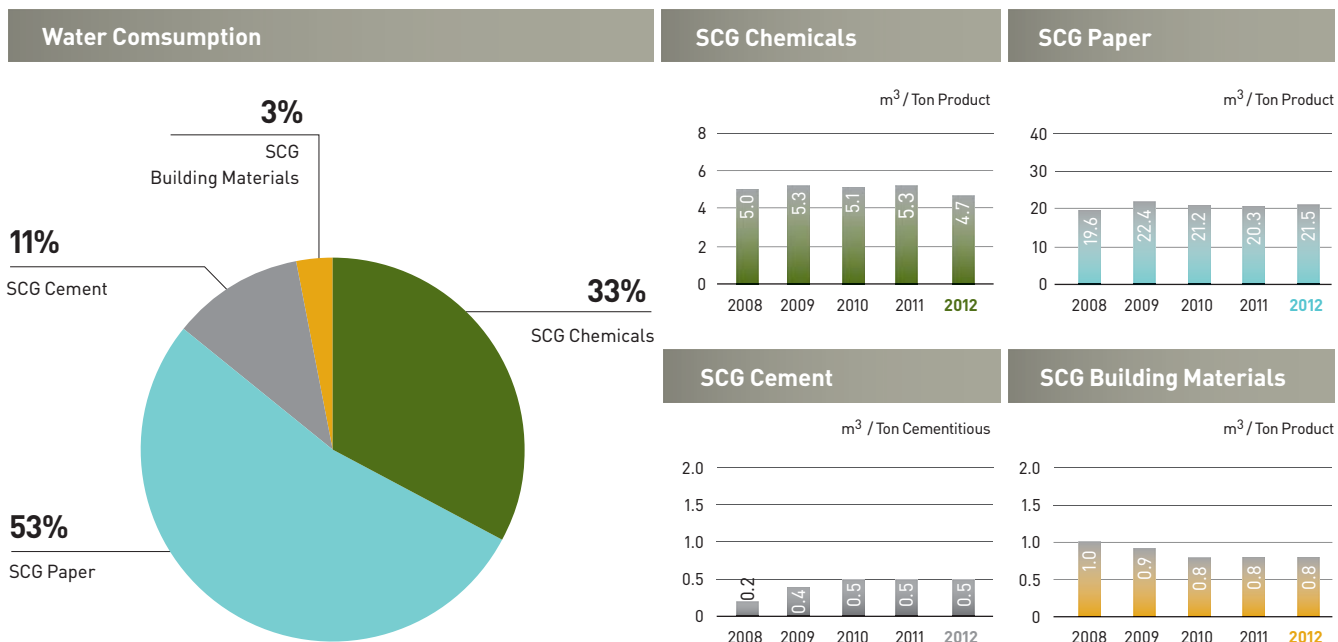
Performance Data	2008	2009	2010	2011	2012	GRI
Oxides of Sulfur [Thousand Tons]	6.50	6.91	6.06	7.52	7.68	EN20



Performance Data	2008	2009	2010	2011	2012	GRI
Particulate Matter [Thousand Tons]	3.43	3.35	2.57	2.36	2.13	EN20



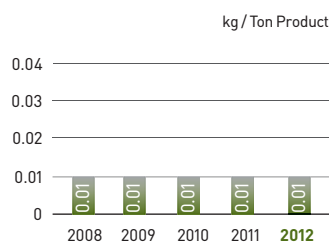
Performance Data	2008	2009	2010	2011	2012	GRI
Water Consumption [Million Cubic Meters]	78.20	91.89	95.50	104.55	110.80	EN8
Proportion of Recycle Water [%]	10.54	10.78	9.99	9.90	9.52	EN10



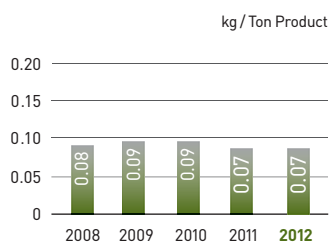
* SCG Chemicals and SCG Paper are main utilizers of recycle water

Performance Data	2008	2009	2010	2011	2012	GRI
BOD [Thousand Tons]	0.56	0.48	0.51	0.46	0.59	EN21
COD [Thousand Tons]	7.76	7.78	7.50	7.34	8.20	EN21
TSS [Thousand Tons]	1.39	1.00	0.90	0.87	1.35	EN21

SCG Chemicals BOD



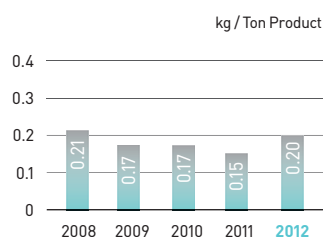
SCG Chemicals COD



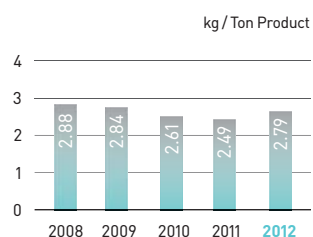
SCG Chemicals TSS

SCG Chemicals
generates a non-significant
amount of total suspended solid

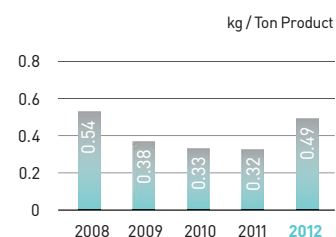
SCG Paper BOD



SCG Paper COD

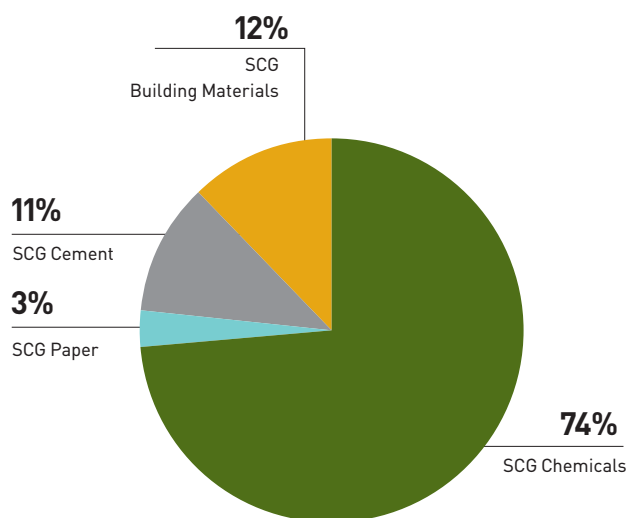


SCG Paper TSS

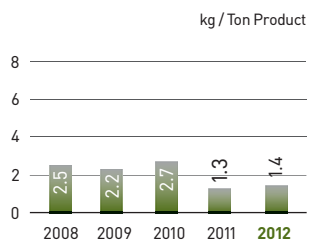


Performance Data	2008	2009	2010	2011	2012	GRI
Hazardous Waste [Thousand Tons]	14.32	13.44	17.02	12.21	14.65	EN22

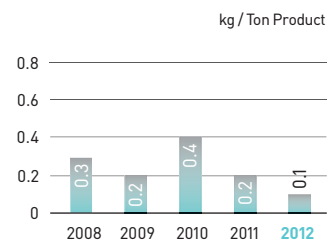
Hazardous Waste



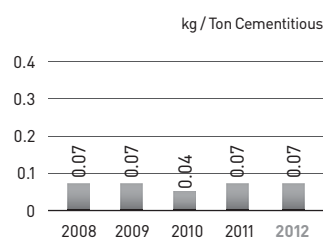
SCG Chemicals



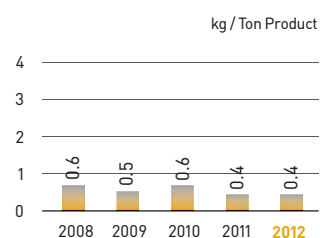
SCG Paper



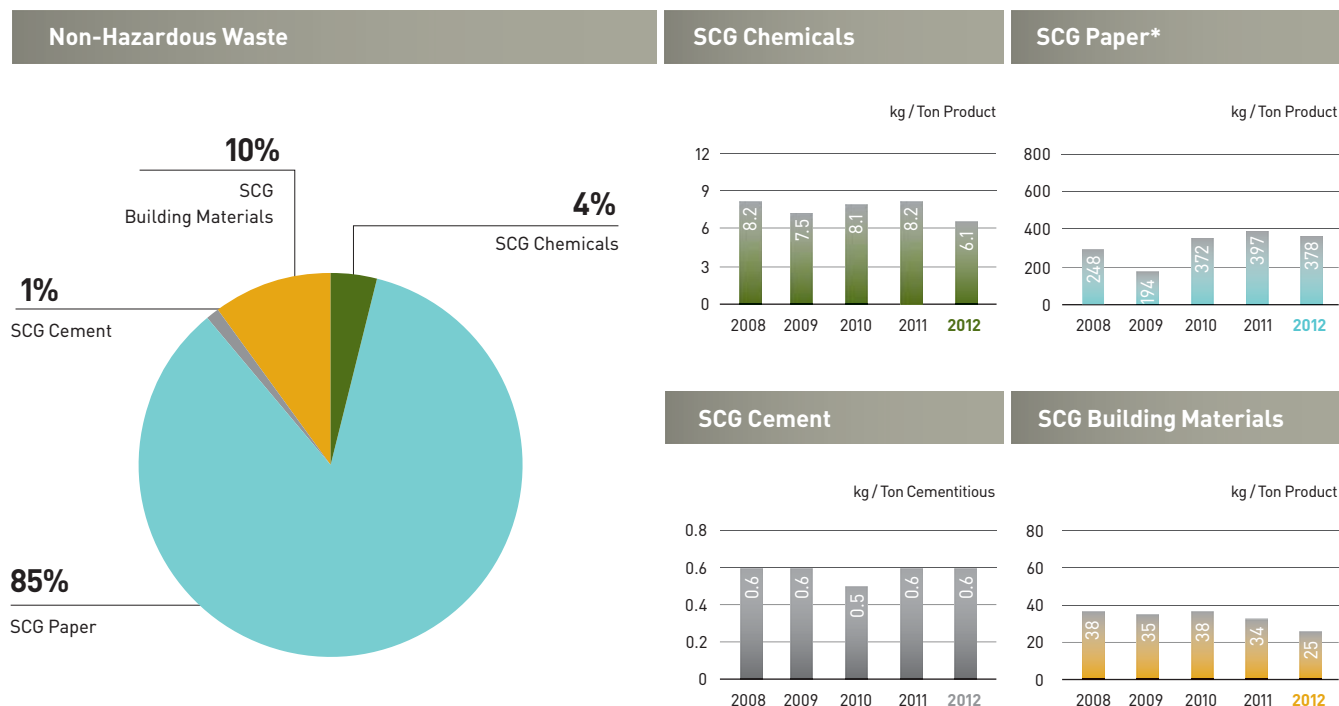
SCG Cement



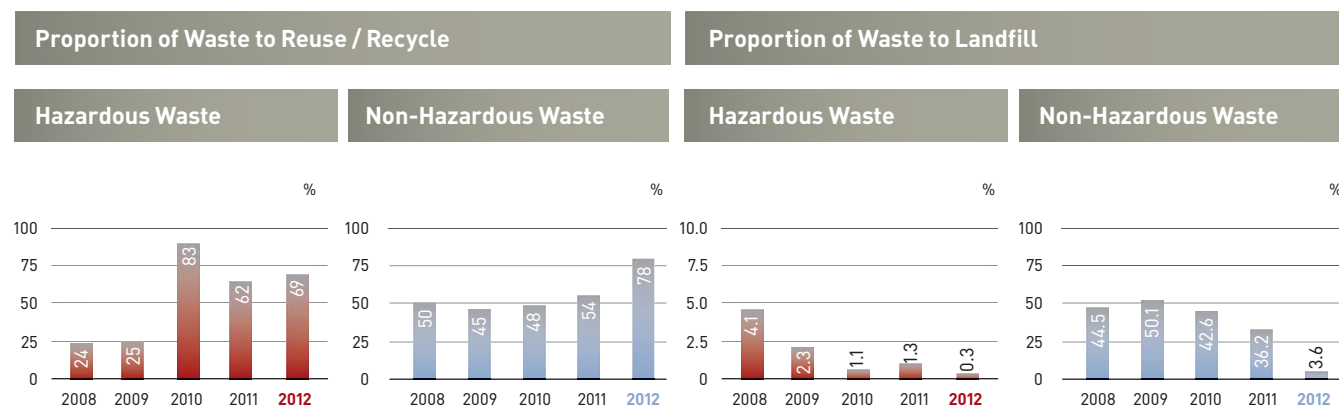
SCG Building Materials



Performance Data	2008	2009	2010	2011	2012	GRI
Non-Hazardous Waste [Thousand Tons]	749.38	653.60	1,176.12	1,305.30	1,215.07	EN22



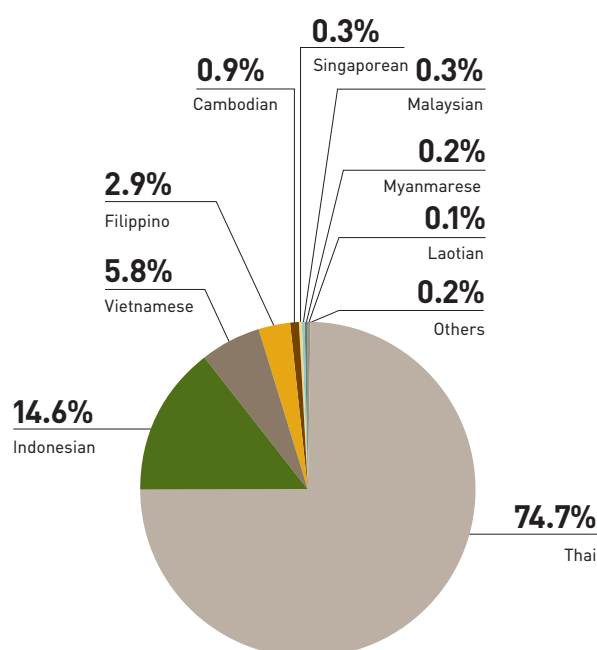
* SCG Paper has revised data from 'as dry basis' to 'as received basis' since 2010



Performance Data	2008	2009	2010	2011	2012	GRI
Social Performance						
Employee Information						
Number of Employees* (persons)	27,305	28,515	30,820	34,725	38,883	LA1
Proportion of Employees by Level						LA1
• Management	4.4	4.7	4.0	3.7	4.8	
• Supervisor and Technical Staff	30.6	31.5	31.8	31.0	32.2	
• Operator	65.0	63.8	64.1	65.3	63.0	
Proportion of Employees by Gender						LA13
• Male	81.0	80.7	79.0	78.0	78.5	
• Female	19.0	19.3	21.0	22.0	21.5	
Proportion of Basic Salary of Female to Male						LA14
• Management	0.97	1.01	0.96	0.86	0.83	
• Supervisor and Technical Staff	0.92	0.94	0.91	0.92	0.93	
• Operator	0.98	0.97	0.92	0.93	0.95	
Proportion of Absence by Type (%)						LA7
• Sickness	14.9	14.7	14.3	14.9	15.0	
• Work-Related Injuries	0.6	0.3	0.4	0.3	0.2	
• Others	84.5	85.0	85.3	84.8	84.8	
Return to Work after Parental Leave of Female Employees** (persons)						LA15
• Number of Employees that Took Parental Leave	NA	NA	NA	NA	217	
• Number of Employees who Returned to Work after Parental Leave Ended	NA	NA	NA	NA	210	
Proportion of Local Senior Management (%)***	46.0	23.9	25.7	22.8	20.5	EC7

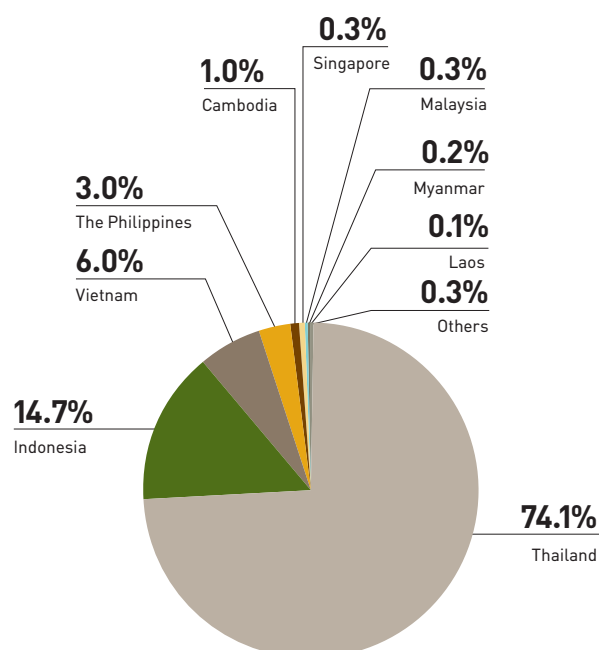
Proportion of Employees by Nationality*

LA1



Proportion of Employees by Country*

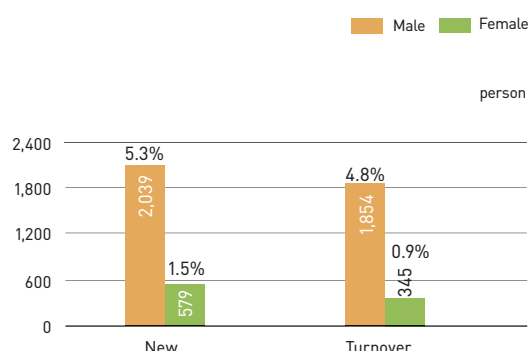
LA1



Remarks * Includes all significant consolidated subsidiaries according to Annual Report 2012
 ** Only female employees are entitled to parental leave by Thai law
 *** Calculate from percentage of overseas senior management and supervisor over total overseas staff
 NA = Not Available

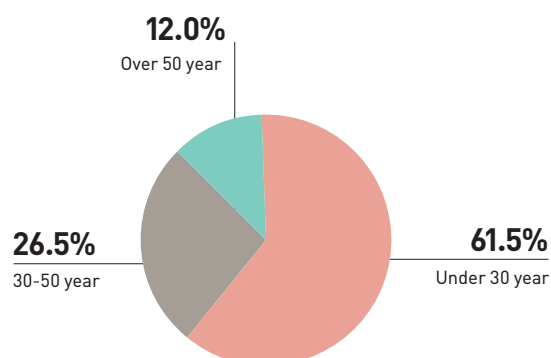
Number of New Employees Hires and Turnover*

LA2



Proportion of Employees Turnover by Ages

LA2



Performance Data	2008	2009	2010	2011	2012	GRI
Social Performance						
Health and Safety Information						
Total Incident Rate (Cases / 200,000 Man-Hours)						LA7
• Employee	0.41	0.42	0.46	0.41	0.36	
• Contractor	0.44	0.60	0.83	0.37	0.23	
Incident Rate (Lost Time Cases) (Cases / 200,000 Man-Hours)						LA7
• Employee	0.07	0.07	0.10	0.12	0.07	
• Contractor	0.09	0.14	0.13	0.12	0.05	
Severity Rate (Days / 200,000 Man-Hours)						LA7
• Employee	1.98	1.01	2.77	2.34	0.84	
• Contractor	1.78	2.94	1.88	1.91	1.15	
Number of Fatalities (Cases)						LA7
• Employee (Male:Female)	3:0	0:0	0:0	0:1	0:0	
• Contractor (Male:Female)	3:0	3:1	12:1	5:3	11:0	
Number of Fatalities from Motor Vehicle Accidents (Cases)						LA7
• Employee (Male:Female)	2:0	0:0	0:0	0:1	0:0	
• Contractor (Male:Female)	2:0	3:0	7:0	1:2	6:0	
Number of Chemical Spillage Cases**						EN23
Level 1 : High Severity	2	4	1	0	1	
Level 2 : Moderate Severity	0	2	3	1	2	
Level 3 : Low Severity	1	4	8	2	1	

Level 1: High severity means that the volume of chemical 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 chemical spills is between 500-2500 kg (plastic powder or granule is between 2,500-5,000 kg) that can be contained (not reaching to environment), and no injury occurred.

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

Remarks * Turnover means those who were resigned, dismissed, fired, retired, or passed away.

** Excludes flammable gas and utility chemicals, e.g. raw water, filtrated water, distilled water, Nitrogen gas, instrument air, service air, or Carbon dioxide.

WBCSD-CSI Operating Results of SCG Cement

		2008	2009	2010	2011	2012
Climate Protection						
Number of facilities adopting WBCSD CO ₂ Protocol	Number of Facility %	6 100	6 100	6 100	6 100	6 100
Absolute Gross CO ₂	Million Tons of CO ₂	13.62	13.66	14.86	14.50	15.46
Absolute Net CO ₂	Million Tons of CO ₂	13.52	13.58	14.73	14.45	15.36
Specific Gross CO ₂	kg CO ₂ / Ton Cementitious	713	721	697	685	680
Specific Net CO ₂	kg CO ₂ / Ton Cementitious	708	717	691	682	675
Use of Fuels and Raw Materials						
Heat Consumption	MJ/Ton Clinker	3,235	3,299	3,314	3,283	3,219
Alternative Fossil Fuels	% by Heat	1.8	2.1	2.7	1.2	2.3
Biomass	% by Heat	13.3	12.9	8.8	11.3	11.8
Alternative Raw Materials	% by Weight	0.57	0.85	0.62	0.50	0.70
Clinker/Cementitious Ratio	%	81.5	82.2	79.9	79.5	79.4
Emission Reduction						
Dust Emissions	Ton	1,391	1,467	1,160	1,022	947
[% of clinker produced by kilns covered by a monitoring system]	%	94.7	99.5	100	100	100
Dust Emission Rate	g / Ton Clinker	83	88	65	58	51
SO ₂	Ton	2,190	1,506	1,232	1,367	1,122
[% of clinker produced by kilns covered by a monitoring system]	%	96.3	99.5	100	100	100
SO ₂ Emission Rate	g / Ton Clinker	130	90	69	77	60
NO _x	Ton	15,451	17,166	14,602	14,887	15,274
[% of clinker produced by kilns covered by a monitoring system]	%	98.7	99.5	100	100	100
NO _x Emission Rate	g / Ton Clinker	920	1,027	817	844	820
Local Impacts						
Quarry sites with rehabilitation plans	Number of Site %	4 100	4 100	4 100	4 100	4 100
Sites with community engagement plans	%	100	100	100	100	100
Site where biodiversity issues are addressed ****	Number of Site (accumulate number)	3	4	4	4	4
	TS / KK / LP KW (added)			-	-	-
Employee Health and Safety						
Fatality						
Employee	Case					
Domestic Cement Plant		0	0	0	0	0
Overseas Cement Plant		0	0	0	0	0
Other Industries in SCG Cement**		2	0	0	0	0
Total		2	0	0	0	0

	2008	2009	2010	2011	2012
Contractor	Case				
Domestic Cement Plant	0	0	2	0	0
Overseas Cement Plant	1	0	0	0	0
Other Industries in SCG Cement**	1	0	1	2	2
Total	2	0	3	2	2
Third Party	Case				
Domestic Cement Plant	0	0	0	0	0
Overseas Cement Plant	0	0	0	0	0
Other Industries in SCG Cement**	5	3	3	3	1
Total	5	3	3	3	1
Lost – Time Injury Accident					
Employee	Case				
Domestic Cement Plant	4	4	4	0	0
Overseas Cement Plant	0	0	0	0	0
Other Industries in SCG Cement**	10	3	2	1	1
Total	14	7	6	1	1
LTIFR (Employee) ***	Case / 1,000,000 Man-hour				
Domestic Cement Plant	NA	NA	0.76	0.00	0.00
Overseas Cement Plant	NA	NA	0.00	0.00	0.00
Other Industries in SCG Cement**	NA	NA	0.37	0.30	0.17
Total	1.35	0.69	0.56	0.80	0.09
Contractor	Case				
Domestic Cement Plant	10	18	6	5	1
Overseas Cement Plant	5	1	1	0	4
Other Industries in SCG Cement**	11	28	13	8	0
Total	26	47	20	13	5
LTIFR (Contractor) ***	Case / 1,000,000 Man-hour				
Domestic Cement Plant	NA	NA	0.26	0.20	0.04
Overseas Cement Plant	NA	NA	0.41	0.00	2.08
Other Industries in SCG Cement**	NA	NA	0.77	0.50	0.00
Total	0.63	1.11	0.47	0.32	0.12

Remarks * The collection and reporting of GHGs data is accordance with WBCSD, The Cement CO₂ Protocol based on company's own control

** Ready-mixed concrete, mortar, refractory and other cement-related products

*** The analysis of lost time injury of employee and contractor separated by industry begins in 2010

**** Names of quarry sites; TS =Thung Song, KK = Kaeng Khoi, LP=Lampang, KW=Khao Wong

About This Report

This 2012 SCG Sustainability Report is the 12th issue published on an annual basis to present our significant performance in economic, social and environment aspects during the period of January 1st, 2012 to December 31st, 2012. This report was prepared to meet all the requirements of the Global Reporting Initiatives Guideline (GRI) version G3.1 at the application level A+, as well as demonstrated our implementations in compliance with UN Global Compact's 10 principles.

The boundary of this report covered only SCG owned management companies located in Thailand as listed in the 2011 Sustainability Report, page 79-81, which can be downloaded from www.scg.co.th.

In 2012, the approach used to define materiality content in this report was not significantly changed from

the previous year. Materiality issues was collected and analyzed by means of interview, survey, suggestion, workshops, opinion panel, etc. with both external and internal stakeholders to ensure the disclosed information is accurate and truly respond to stakeholder needs. Materiality issues of this report were reviewed and prioritized by SCG Sustainable Development Committee and Sustainable Organization Development at business unit level.

To ensure the integrity and transparency of this report, SCG has requested external party for the 4 consecutive years to verify and assess the content integrity at the A+ level. The details of the verification can be found on page 95.

GRI Application Level Criteria

Report Application Level		C	C+	B	B+	A	A+
Standard Disclosures	<div><div>G3 Profile Disclosure</div><div>OUTPUT</div></div>	Report On: 1.2 2.1-2.10 3.1-3.8, 3.10-3.12 4.1-4.4, 4.14-4.15	Report Externally Assured	Report on all criteria listed for Level C plus: 1.2 3.9, 3.13 4.5-4.13, 4.16-4.17	Report Externally Assured	Same as requirement for Level B	Report Externally Assured
	<div><div>G3 Management Approach Disclosures</div><div>OUTPUT</div></div>	Not Required		Management Approach Disclosures for each Indicator Category		Management Approach Disclosures for each indicator Category	
	<div><div>G3 Performance Indicator & Sector Supplement Performance Indicators</div><div>OUTPUT</div></div>	Report on a minimum of 10 Performance Indicators, including at least one from each of: Economic, Social and Environmental.		Report on a minimum of 20 Performance Indicators, at least one from each of Economic, Environmental, Human Rights, Labor Society, Product Responsibility.		Report on each core G3 and Sector Supplement* Indicator with due regard to the Materiality Principle by either: a) reporting on the Indicator or b) explaining the reason for its omission.	
*Sector supplement in final version							

The electronic file of this report and the previous issues can be downloaded from SCG website.

For more information, please contact:

SCG Sustainable Development Committee, 1 Siam Cement Road, Bangsue, Bangkok 10800

Phone: 0-2586-5071-2, Fax: 0-2586-2836 e-mail: info@scg.co.th , Website: www.scg.co.th

United Nations Global Compact (UNGC)

SCG voluntarily joined the member of UN Global Compact or the ten universally accepted principles since 2012 to demonstrate our intention to perform the business in accordance with the universal principles of human rights, labor, environment and anti-corruption in line with

corporate governance and SCG's Code of Conduct without any legal obligation. As part of this commitment, we have pledged to be one of the world's Responsible Corporate Citizen. The implementation plans toward such commitment are as follows;

Areas	Principle	Action	Pages
Human Rights	<ol style="list-style-type: none"> 1. Support and respect the protection of internationally proclaimed human rights; and 2. Make sure that they are not complicit in human rights abuses. 	<ul style="list-style-type: none"> • Define guideline regarding human rights in SCG's Code of Conduct • Allow employees to share their opinions or grievance via Whistleblower 	58-59
Labor	<ol style="list-style-type: none"> 1. Uphold the freedom of association and the effective recognition of the right to collective bargaining; 2. Eliminate all forms of forced and compulsory labor; 3. Effective abolition of child labor; and 4. Eliminate discrimination in respect of employment and occupation. 	<ul style="list-style-type: none"> • Allow employees to form association or labor union • Strictly comply with labor laws and regulations • Prohibit employment of person under 18 years of age 	56-59
Environment	<ol style="list-style-type: none"> 1. Support a precautionary approach to environmental challenges; 	<ul style="list-style-type: none"> • Set target of greenhouse gas emission reduction of 10 percent minimum from the base year (2007) • Reduce natural resource utilization and water consumption • Reduce and control air pollution emissions • Manage industrial waste in accordance with 3R principle 	42-44 45-46 47 48
	<ol style="list-style-type: none"> 2. Undertake initiatives to promote greater environmental responsibility; and 	<ul style="list-style-type: none"> • Manage biodiversity and ecosystem • Implement energy saving and environmentally friendly building • Undertake SCG Conserving Water for Tomorrow project • Undertake Sharing Opportunities , Drawing the Future project and volunteering activities by SCG's employees 	49-51 52-53 65-66 71-73
	<ol style="list-style-type: none"> 3. Encourage the development and diffusion of environmentally friendly technologies 	<ul style="list-style-type: none"> • Develop SCG eco value products • Implement green logistics • Organize ASEAN Sustainable Development Symposium • Participate in Community Partnership Association in Rayong province and Cement Partnership Initiatives in Saraburi Province 	33-34 36 68 69
Anti-corruption	<ol style="list-style-type: none"> 1. Work against corruption in all forms, including extortion and bribery. 	<ul style="list-style-type: none"> • Announce policy and guideline regarding anti-corruption through corporate governance handbook and SCG's Code of Conduct • Enhance knowledge and understanding for employees regarding SCG's Code of Conduct • Allow employees to share their opinion or grievance via Whistleblower 	58

G3.1 Content Index

G3.1 Indicator	Description	AR Page Number	SR	2012 Disclosure
Strategy and Analysis				
1.1	Statement from the most senior decision-maker of the organization	4-5	4-5	Full
1.2	Description of key impacts, risks, and opportunities	43-51	10-17, 20,	Full
Organisational Profile				
2.1	Name of the organisation	1	1	Full
2.2	Primary brands, products, and/or services	-	2-3	Full
2.3	Operational structure of the organisation	6	22	Full
2.4	Location of organisation's headquarters	1	88	Full
2.5	Countries where the organisation operates	-	28	Full
2.6	Nature of ownership and legal form	1, 5-6	-	Full
2.7	Markets served	10-19	1-3	Full
2.8	Scale of the reporting organisation	54-69	88	Full
2.9	Significant changes during the reporting period in size, structure, ownership	10-19	-	Full
2.10	Awards received in the reporting period	-	96-98	Full
Report Parameters				
3.1	Reporting period (e.g. fiscal/calendar year) for information provided	1	88	Full
3.2	Date of most recent previous report (if any)	-	88	Full
3.3	Reporting cycle (annual, biennial, etc.)	-	88	Full
3.4	Contact point for questions.	1	88	Full
3.5	Process for defining report content	-	20	Full
3.6	Boundary of the report	54-69	88	Full
3.7	Any specific limitations on the scope or boundary of the report	-	88	Full
3.8	Basis for reporting on joint ventures, subsidiaries, etc.	-	88	Full
3.9	Data measurement techniques and the bases of calculations	-	88	Full
3.10	Explanation of effect of re-statements of information provided previously	-	-	Full
3.11	Significant changes in scope, boundary, or measurement methods	-	-	Full
3.12	Table identifying the location of the Standard Disclosures in the report	-	90-93	Full
3.13	Policy and current practice on seeking external assurance for the report	-	88	Full
Governance, Commitments, and Engagement				
4.1	Governance structure of the organisation	6	10, 22	Full
4.2	Indicate if Chair of the board is also an executive officer	31	-	Full
4.3	The board members that are independent and/or non-executive members	28	-	Full
4.4	Ways for shareholders and employees to provide recommendations or direction	20-24	18-19	Full
4.5	Link between compensation of board and management with performance	37-39	-	Full
4.6	Processes in place for the board to ensure conflicts of interest are avoided	24	-	Full
4.7	Process for determining the qualifications and expertise of the board	37	-	Full
4.8	Internally developed statements of mission or values, codes of conduct, & principles	-	6-7	Full
4.9	Procedures of the board for overseeing identification and management of performance	37	-	Full
4.10	Processes for evaluating the boards own CSR performance	37-38	-	Full
4.11	Explanation of whether and how the precautionary approach or principle is addressed	43-51	10-17	Full
4.12	Externally developed economic, environmental, and social charters, principles	-	74-75	Full
4.13	Memberships in associations	-	inside cover, 74-75, 86-87, 89	Full

AR = Annual Report
SR = Sustainability Report

G3.1	Description	AR	SR	2012 Disclosure
Indicator		Page Number		
4.14	List of stakeholder groups engaged by the organisation	25-26	18-19	Full
4.15	Basis for identification and selection of stakeholders with whom to engage	24-27	18-19	Full
4.16	Approaches to stakeholder engagements	24-27	18-19	Full
4.17	Key topics and concerns that have been raised through stakeholder engagement	24-27	18-19	Full
Economic				
EC1	Direct economic value generated and distributed	2-3, 9	76	Full
EC2	Financial implications and other risks and opportunities for the organisation's activities due to climate change	51	15	Full
EC3	Coverage of the organisation's defined benefit plan obligations	-	58-59, 76	Full
EC4	Significant financial assistance received from government	-	76	Full
EC5	Additional: Range of ratios of standard entry level wage by gender compared to local minimum wage	-	58	Full
EC6	Policy, practices, and proportion of spending on locally-based suppliers	25	19, 29	Full
EC7	Local hiring and proportion of senior management hired from the local community	-	84	Partial
EC8	Development and impact of infrastructure provided primarily for public benefit	-	65-73	Partial
EC9	Additional: Understanding and describing significant indirect economic impacts	43-48	10-14	Full
Environmental				
EN1	Materials used by weight or volume	-	45, 77, 86	Full
EN2	Percentage of materials used that are recycled input materials	-	45, 77	Full
EN3	Direct energy consumption by primary energy source	-	42-43, 78, 86	Full
EN4	Indirect energy consumption by primary source	-	78	Full
EN5	Additional: Energy saved due to conservation and efficiency improvements	11, 17	42-43, 78	Full
EN6	Additional: Energy-efficient or renewable energy products and services	-	33-34, 42-44, 52-53	Full
EN7	Additional: Indirect energy consumption reduction initiatives and results	-	41-44, 52-53	Full
EN8	Total water withdrawal by source	-	46	Full
EN9	Additional: Water sources significantly affected by withdrawal of water	-	46	Full
EN10	Additional: Percentage and total volume of water recycled and reused	-	46, 81	Full
EN11	Location and size of land by protected areas and areas of high biodiversity value	-	49-51, 86	Full
EN12	Description of significant impacts of activities, products and services on biodiversity	-	49-51	Full
EN13	Additional: Habitats protected or restored	-	49-51	Full
EN14	Additional: Managing impacts on biodiversity	-	24, 49-51	Full
EN15	Additional: IUCN Red List species and other list species with habitats affected by operations	-	None	Full
EN16	Total direct and indirect greenhouse gas emissions by weight	-	24, 42-44, 79, 86	Full
EN17	Other relevant indirect greenhouse gas emissions by weight	-	24, 36, 42-44	Full
EN18	Additional: Initiatives to reduce greenhouse gas emissions and reductions achieved	-	33-34, 36, 41-44, 52-53	Full
EN19	Emissions of ozone-depleting substances by weight	-	47, 52-53	Full
EN20	NOx, SOx, and other significant air emissions by type and weight	-	47, 80-81, 86	Full
EN21	Total water discharge by quality and destination	-	82	Partial
EN22	Total weight of waste by type and disposal method	-	24, 48, 82-83	Full
EN23	Total number and volume of significant spills	-	85	Full
EN24	Additional: Weight of waste deemed hazardous	-	48, 82-83	Partial
EN25	Additional: Details of water and habitats significantly affected by discharges of water and runoff	-	46	Partial

AR = Annual Report
SR = Sustainability Report

G3.1 Indicator	Description	AR Page Number	SR	2012 Disclosure
EN26	Initiatives and extent of environmental impacts of products and services mitigation	-	25, 31-34	Partial
EN27	Percentage of products sold and their packaging materials reclaimed by category	-	Not Available	-
EN28	Significant fines and non-monetary sanctions for non-compliance with environmental law	Note: no significant fines		-
EN29	Additional: Significant environmental impacts of transporting products etc. and workforce	-	36-37	Partial
EN30	Additional: Total environmental protection expenditures and investments by type	-	76	Full
Social : Labour Practices and Decent Work				
LA1	Total workforce by employment type, employment contract, and region broken down by gender	-	84	Full
LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region	-	85	Full
LA3	Additional: Benefits for full-time employees not provided to temporary or part-time	Note: benefits provided to temporary and part-time employees are as specified by Thai law		
LA4	Percentage of employees covered by collective bargaining agreements	-	Non Relevance	-
LA5	Minimum notice period(s) regarding significant operational changes	Note: comply with Thai law		Full
LA6	Additional: % workforce in formal management-worker health and safety committees	Note: comply with Thai law		Full
LA7	Rates of injury, occupational diseases, lost days and absenteeism, & number of work-related fatalities by region and by gender	-	63, 85, 87	Partial
LA8	Education, training, counselling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases	-	36-39, 56-58	Partial
LA9	Additional: Health and safety topics covered in formal agreements with trade unions	-	Non Relevance	Partial
LA10	Average hours of training per year per employee by gender and by employee category	-	56-59	Partial
LA11	Additional: Programmes for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	-	36-39, 56-59	Partial
LA12	Additional: % employees with regular performance & career development reviews by gender	-	56-59	Partial
LA13	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	-	84	Full
LA14	Ratio of basic salary and remuneration of women to men by employee category	-	84	Full
LA15	Return to work and retention rates after parental leave, by gender	-	84	Full
Social : Human Rights				
HR1	Percentage and total number of significant investment agreements and contracts that include human rights clauses or that have undergone human rights screening	Note: all agreements are in compliance with Code of Conduct		Partial
HR2	Percentage of significant suppliers, contractors, and other business partners that have undergone human rights screening and actions taken.	-	58-59, 61	Partial
HR3	Hours and % of employee training on policies and procedures in human rights	-	56-58	Partial
HR4	Total number of incidents of discrimination and corrective actions taken	Note: no incidents		Full
HR5	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights		89 Code of Conduct	Full
HR6	Operations and significant suppliers with significant risk for incidents of child labor, and measures taken to effective abolition of child labor		Code of Conduct	Partial
HR7	Operations and significant suppliers with significant risk of forced or compulsory labor, and measures to eliminate of all forms of forced or compulsory labor.		Code of Conduct	Partial

AR = Annual Report
SR = Sustainability Report

G3.1 Indicator	Description	AR Page Number	SR	2012 Disclosure
HR8	Additional: Percentage of security personnel trained in the organisation's policies or procedures concerning aspects of human rights that are relevant to operations	Note: all are trained according to contract agreement		Partial
HR9	Additional: Incidents of violations involving rights of indigenous people & actions taken	Note: no incidents		Full
HR10	Percentage of total number of operations that have been subject to human rights reviews and/or impact assessment	100% reviewed by Code of Conduct		Full
HR11	Number of grievances related to human rights files, addressed, and resolved through formal grievance mechanisms	Note: no incidents		Full
Social : Society				
S01	Percentage of operations with implemented local community engagement, impact assessments, and development programs	-	64-73	Full
S02	Percentage and total number of business units analysed for risks related to corruption	21		Full
S03	Percentage of employees trained in organisation's anti-corruption policies and procedures		58-59	Full
S04	Actions taken in response to incidents of corruption	40-43	58-59	Partial
S05	Public policy positions and participation in public policy development and lobbying	20-21		Full
S06	Additional: Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	-	Non Relevance	Full
S07	Additional: Total number of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes	-	Non Relevance	Full
S08	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	Note: no significant fines		Full
Social : Product Responsibility				
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories	-	33-34, 45	Full
PR2	Additional: Incidents of non-compliance with regulations and voluntary codes on health and safety impacts of products and services during their life cycle, by type of outcomes	-	35	Full
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements	-	35	Full
PR4	Additional: Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes	-	35	Full
PR5	Additional: Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	-	31-32, 35	Full
PR6	Programmes for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship	-	35	Full
PR7	Additional: Total number of incidents of non-compliance with regulations and voluntary codes on marketing communications, including advertising, promotion, and sponsorship by type of outcomes	-	35	Full
PR8	Additional: Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	-	35	Full
PR9	Additional: Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	-	35	Full

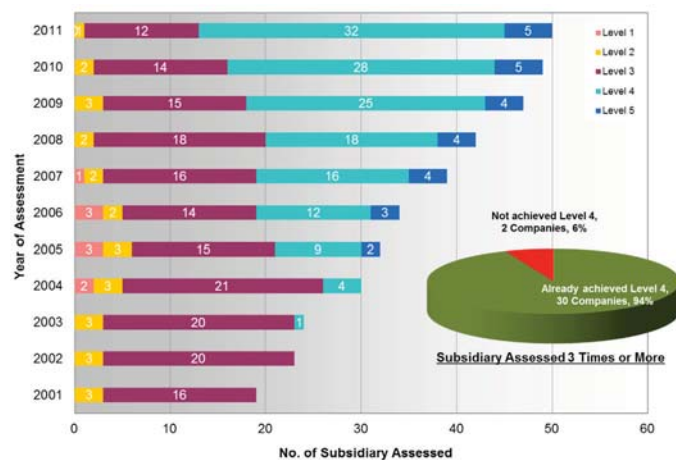
AR = Annual Report
SR = Sustainability Report

Assurance Statement

SCG Assessing Environmental Performance

SCG has implemented the Environmental Performance Assessment Program (EPAP) since 2001 with a continuous increase in the number of subsidiaries participating in this program. Up to 2012, 50 subsidiaries in total participated in the program with 134 assessments being conducted. During 2012, the assessors of ERM-Siam Co., Ltd. continued the 2011 environmental performance assessment program at 10 factories due to the schedule postponement as a result of major flooding in Thailand in 2011.

The EPAP assessment results of individual subsidiaries are demonstrated in terms of maturity levels comprising Level 1: Denial; Level 2: Reactive; Level 3: Assurance; Level 4: Business Integration; and Level 5: Leadership. The results of previous assessments indicate a continuous improvement in the environmental performance with an increased number of subsidiaries obtaining higher level especially Level 4. Over 90% of the subsidiaries that have been assessed more than 3 times, have achieved at least Level 4 as per the target set out by SCG. The assessment results up to 2011 are summarized in the chart below.



Based on the assessment conducted in 2012, the major focus of SCG to further improve its performance and move toward sustainable business operations includes.

Regulatory Compliance: Developing clear operating procedure and instructions in order to be in compliance with relevant regulations, Integrating critical compliance requirements into tasks/ current management practices.

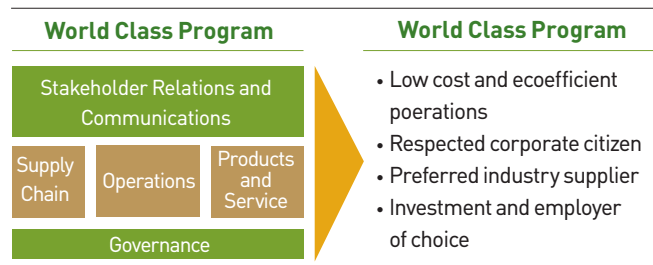
Integrated Risk Management for Better Planning Process: Implementing an integrated view of safety, environmental and community critical risks of new projects as part of Initial Phase Management of Total Productivity Management (TPM) program, Identifying clear roles and responsibilities of employees and business partners for environmental issues management.

Raising Environmental and Safety Awareness and Performance to Business Partners: Conducting specific environmental and safety training and awareness building activities for business partners, Implementing operational excellence management standards (including partnership strategies) that are applicable to business partners' risks.

Sustainability Challenges/ Risks: Most facilities have identified sustainability challenges/ emerging risks and integrated them into their business/ company medium term

plans. Ongoing program include stakeholder dialogue and engagement, resource conversation, environmental footprints/ opportunity, etc.

SCG and ERM-Siam Co., Ltd. have together reviewed and upgraded the assessment approaches in 2012 in order to cover all dimensions of sustainable development. The clearer scope and approaches will drive environmental performance improvement for all companies of SCG to provide 'World Class Results'. The new scope of assessment program will include main 5 elements i.e. Governance, Supply Chain, Operations, Product and Stakeholder Relation and Communication.



The upgraded approaches and scope will be applied to the assessment to all companies required staring from 2013 onward



Environmental Resources Management Thailand Business Unit, 22 February 2012

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 Assurance Report on Sustainability Report 2012

To SCG Sustainable Development Committee of The Siam Cement Public Company Limited

The Siam Cement Public Company Limited ('SCG') engaged us to perform a limited assurance engagement on selected subject matter ('the Subject Matter') presented in the sustainability report for the year ended 31 December 2012 ('the Sustainability Report') in accordance with the reporting criteria ('the Criteria').

Subject Matter

The selected Subject Matter was chosen by SCG comprises:

- a) Environmental dimension performance indicators
 - Energy and alternative energy consumption (petajoules) (Page 78)
 - Greenhouse gases emission (scope 1 & 2) (million tons) (Page 79)
 - Total weight of waste by type and disposal method (thousand tons) (Page 82-83)
 - Water consumption (million cubic meters) and proportion of recycled water (%) (Page 81)
- b) Social dimension performance indicators
 - Total incident rate, incident rate (lost time cases), and number of fatalities (Page 63, 85)

Criteria

The selected Subject Matter above has been assessed according to the following Criteria:

- The WBCSD/WRI Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, and
- The 'Sustainability Reporting Guidelines version 3.1' by the Global Reporting Initiative

Inherent limitations

Inherent limitations exist in all assurance engagements due to the selective testing of the information being examined. Therefore fraud, errors or non-compliance may occur and not be detected. Additionally, non-financial data may be subject to more inherent limitations than financial data, given both its nature and the methods used for determining, calculating and estimating such data.

Responsibility and Methodology

SCG:

The management of SCG is responsible for preparing the Sustainability Report, determining the adequacy of the Criteria to meet the reporting need of SCG. Management's responsibility also includes designing, implementing and maintaining of a system of internal control relevant to the preparation and fair presentation of the selected Subject Matter that is free from material misstatement, whether due to fraud or error.

PwC:

Our responsibility is to provide a conclusion on the subject matter based on evidence-gathering procedures in accordance with the International Standard on Assurance Engagements (ISAE) 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information".

The procedures selected depend on auditor judgment, including an assessment of the risks of material misstatement of the selected Subject Matter, whether due to fraud or error. In making these risk assessments, we consider internal control relevant to SCG's preparation and fair presentation of the selected Subject Matter in the Sustainability Report in order to design assurance procedures that are appropriate in

the circumstances, but not for the purpose of expressing a conclusion on the effectiveness of SCG's internal controls.

We read other information included within the Sustainability Report and consider whether it is consistent with the knowledge obtained through our procedures. We consider the implications for our report if we become aware of any apparent material inconsistencies with the selected Subject Matter. Our responsibilities do not extend to any other information reported by SCG.

Assurance work performed

The assurance procedures included the following work:

- visiting selected sites of four business units:
 - Cement (The Siam Cement (Kaeng Khoi) Co., Ltd.)
 - Chemicals (Map Ta Phut Olefins Co., Ltd.)
 - Paper (Thai Kraft Paper Industry Co., Ltd.), and
 - Building Materials (Thai – German Ceramic Industry PLC)
- completing analytical procedures
- reviewing the appropriateness of management review and reporting processes
- performing substantive testing of selected data to source information, and
- reviewing the process for consolidating data at a corporate level.

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

We believe that the information we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Use of our report

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

Our report is intended solely for the SCG Sustainable Development Committee for the purpose described above, and must not be distributed or used by any other party.

Conclusion

Based on the work described above, nothing has come to our attention that causes us to believe that the selected Subject Matter for the year ended 31 December 2012 included in the Sustainability Report has not been prepared, in all material respects, in accordance with the Criteria.

For PricewaterhouseCoopers ABAS Limited

By Svasvadi Anumanrajdhon
Partner

Bangkok, Thailand
28 February 2013

Pride of SCG



The First Building in ASEAN Awarded with LEED Platinum



The Best CFO and The Best Company from Southeast Asia's Institutional Investor Corporate Poll



Thailand Corporate Excellence Awards 2011

SCG

- HRH Princess Maha Chakri Sirindhorn's Trophy for Thailand Corporate Excellence Awards 2011 from Thailand Management Association (TMA) and Sasin Graduate Institute of Business Administration of Chulalongkorn University
 - Human Resource Management for the 11th consecutive year
 - Innovation Excellence for the 7th consecutive year
 - Corporate Social Responsibility Excellence
 - Product and Service Excellence
 - A Decade of Excellence: Hall of Fame
- Sector Leader in Building Materials & Fixtures from Dow Jones Sustainability Indexes (DJSI) by Robeco Sustainable Asset Management (RobecoSAM) for the 2nd consecutive year
- LEED Platinum in Energy and Environmental Design for Existing Buildings: Operations & Maintenance (LEED EB:OM) from the U.S. Green Building Council (USGBC), 1st certified building in ASEAN for SCG Head Office Building 1 & 2 and Building 5
- The Best CFO in Thailand and The Best Company from Southeast Asia's Institutional Investor Corporate Poll of Alpha Southeast Asia Magazine
 - Most Organized Investor Relations
 - Strongest Adherence to Corporate Governance
 - Most Consistent Dividend Policy
 - Best Strategic CSR
- The Best Investor Relations Company (Thailand), Best CSR, Best Investor Relations Professional from Asian Excellence Recognition Awards 2011 of Corporate Governance Asia

- The Best CEO and The Investor Relations Awards in Real Estate and Building Materials Group from Securities Analysis Association
- Thailand's Top Corporate Brand Values 2012 Real Estate and Construction Group from Chulalongkorn University
- SET Award of Honor in Best Corporate Social Responsibility for the 5th consecutive year from The Stock Exchange of Thailand (2007-2011)
- Asia Responsible Entrepreneurship Awards-South East Asia from Enterprise Asia

SCG Chemicals

SCG Chemicals Co., Ltd.

- The Best Trade Finance Solution in Thailand 2012 from The Asset Magazine

Rayong Olefins Co., Ltd.

- Advance Special Award for TPM Achievement from Japan Institute of Plant Maintenance

Map Ta Phut Olefins Co., Ltd.

- Carbon Reduction Label from Thailand Greenhouse Gas Management Organization (Public Organization), Thailand Environmental Institute (TEI) and Thailand Business Council for Sustainable Development (TBCSD)
- Green Industry Award for Green Culture (4th level) from The Ministry of Industry

Thai MMA Co., Ltd.

- Special Award for TPM Achievement from Japan Institute of Plant Maintenance



SCG Chemicals received Carbon Reduction Label Certification for 6 products



The Best Trade Finance Solution in Thailand 2012 from The Asset Magazine



TPM Award form Japan Institute of Plant Maintenance

Thai MFC Co., Ltd.

- Carbon Reduction Label from Thailand Greenhouse Gas Management Organization (Public Organization), Thailand Environmental Institute (TEI) and Thailand Business Council for Sustainable Development (TBCSD)
- Award for Excellence in Consistent TPM Commitment from Japan Institute of Plant Maintenance

Siam Mitsui PTA Co., Ltd.

- Award for Excellence in Consistent TPM Commitment from Japan Institute of Plant Maintenance

Map Ta Phut Tank Terminal Co., Ltd.

- Award for Excellence in Consistent TPM Commitment from Japan Institute of Plant Maintenance
- The Prime Minister's Industry Award for Safety Management from The Ministry of Industry

Thai PET Rasin Co., Ltd.

- Award for Excellence in Consistent TPM Commitment from Japan Institute of Plant Maintenance

SCG Paper

Siam Kraft Industry Co., Ltd.

- Special Award for TPM Achievement from Japan Institute of Plant Maintenance

Siam Cellulose Co., Ltd.

- Green Industry Award for Green Culture (4th level) from The Ministry of Industry

Thai Cane Paper Public Company Limited (Kanchanaburi Plant)

- 3Rs Award and Zero Waste to Landfill Achievement Award from The Ministry of Industry
- Award for Excellence in Consistent TPM Commitment from Japan Institute of Plant Maintenance

Thai Containers Songkhla (1994) Co., Ltd.

- The Prime Minister's Industry Award for Productivity Improvement from The Ministry of Industry

Thai Containeris Group Co., Ltd. (Samutpakarn Plant)

- Special Award for TPM Achievement from Japan Institute of Plant Maintenance
- The Prime Minister's Industry Award for Safety Management from The Ministry of Industry

United Pulp and Paper Co., Inc. (Philippines)

- Certification of Sustainable Development for Management of Waste Criteria from The Federation of Philippine Industries

SCG Cement

The Siam Cement (Ta Luang) Co., Ltd.

- 3Rs Award and Zero Waste to Landfill Achievement Award from The Ministry of Industry

The Siam Cement (Kaeng Khoi) Co., Ltd.

- Award for Excellence in Consistent TPM Commitment from Japan Institute of Plant Maintenance



Thailand Energy Awards



Trusted Brand 2012



The Prime Minister's Export Award for Export Logistics Model

SCG Building Materials

The Siam Sanitary Ware Co., Ltd.

- Trusted Brand 2012 for Bathroom Ware (Platinum level) from Reader's Digest Magazine

The Siam Sanitary Ware Industry Co., Ltd.

- Carbon Reduction Label from Thailand Greenhouse Gas Management Organization (Public Organization), Thailand Environmental Institute (TEI), and Thailand Business Council for Sustainable Development (TBCSD)
- Thailand Energy Awards 2012 for Outstanding Management of Controlled Plant from The Ministry of Energy

The Siam Ceramic Group Industries Co., Ltd.

- Thailand Energy Awards 2012 for Outstanding Management of Controlled Industry from The Ministry of Energy
- 3Rs Award and Zero Waste to Landfill Achievement Award from The Ministry of Industry

Thai Ceramic Co., Ltd.

- Good Design Awards (G-Mark) 2012 from Japan Industrial Design Promotion Organization

Thai-German Ceramic Industry Public Company Limited

- Thailand Energy Awards 2012 for Energy Responsible Officer from The Ministry of Energy

Sosuco Ceramic Co., Ltd.

- The Prime Minister's Industry Award for Energy Management from The Ministry of Industry

SCG Distribution

SCG Logistics Management Co., Ltd.

- The Prime Minister's Export Award for Export Logistics Model from The Ministry of Commerce



SCG ensures this report is environmentally friendly. All paper is 100% made from EcoFiber using Green Process by SCG Paper. Soy ink is used in the printing process without laminating or any special printing technique.



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