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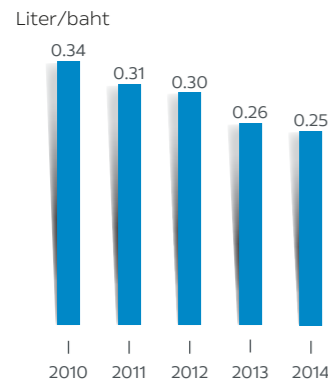
Sustainable Water Management



Recycled Water

7%

Water Withdrawal Intensity (Revenue from Sales)



Water is an important resource and factor for the industrial sector as well as for national security. It is the foundation of economic and social survival. Although ASEAN has an adequate supply of water, some countries still encounter seasonal shortages. The main reason for this is the rapid increase in demand from industrial and agricultural sectors as well as population growth. Therefore, integrated water resource management is needed to ensure the equal accessibility to quality water supply for all sectors.

SCG's Water Management program has been set up as a measurement of operational performance because of the

expense and of this essential resource of the production process. In order to ensure that water management is consistent with the Company's vision for sustainable development, SCG has established a Water Management Committee. The committee is composed of representatives from all business units and is responsible for articulating a Water Management Policy. The aim of the policy is to reduce the impact from water usage on stakeholders throughout the supply chain, which covers water usage reduction, innovative waste water treatment technology and water recycling after treatment.

Industrial Sector Risk Awareness

SCG uses more than 100 million m³ of water each year from water sources throughout ASEAN. As a result, water resources related risks can impact SCG in several dimensions.

- Floods and droughts caused by inappropriate water management result in business interruption. Southeast Asian countries still repeatedly and continually encounter floods and droughts. Satellite photographs show that many areas have both floods and droughts in the same year. Furthermore, climate change also affects precipitation in terms of area and time, which makes water management more difficult.
- The quality of water that is brought in for usage and released out to communities must be managed in order to comply with the minimum standards of the applicable laws along with consideration of current and potential fees.

- Surrounding community acceptance is another impact. Water resources are shared among several sectors, such as agriculture, household, business and industry. If more than 5% of all local water supplies are used by industry, it can cause conflicts with local communities.

Managing Risks with Sufficiency

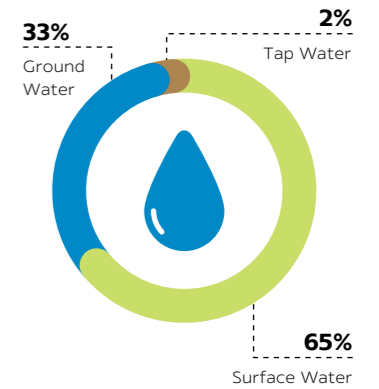
SCG's water risk management strategies emphasize proactive operations by exercising relevant education, and applying appropriate research and modern technology. These strategies also have support plans to monitor and control risks before they

actually occur. In some unpreventable cases, an emergency procedure will be used to prevent the interruption of workflow as well as to prevent other potential conflicts.

Defining Global Standard

SCG has improved production procedures in order to increase effectiveness in all areas by implementing Total Quality Management (TQM) and Total Productive Maintenance (TPM) systems, and determining key performance indices of water withdrawal per production unit, proportion of recycled water, and quality of discharged water. The indices will be compared with benchmarks from other global organizations and reviewed by executive management on a quarterly basis. Important projects include the construction of the Siam Kraft Industry Co., Ltd.'s plant, the latest paper production plant. PM16 is designed to have the highest efficient water consumption, such as Turbo Vacuum Pump to revoke using sealing water, closed loop cooling water, as well as balancing of the pulp containers operation and water tanks to reduce filling water, in which only 6 cubic meters of water per ton of paper will be used. In addition, the anaerobic water treatment system with an Internal Circulation Reactor, the most efficient water treatment system, which is employed in Vina Kraft Paper Co., Ltd. has been adopted to add to its success. It also reduces energy consumption and provides biogas for steam and electricity production.

Proportion of Water Withdrawal Sources



Sustainable Water Resources

SCG adheres to the royal principles proposed by His Majesty King Bhumibol to create community engagement in every operational area. There are several community engagement projects, including the launch of the 'SCG Conserving Water for Tomorrow' project, constructing more than 65,440 check dams to prevent and decrease floods and provide water resources to forests and local communities. Furthermore, SCG Chemicals has established a Drought Crisis Management team in conjunction with Eastern Water Resources Development and Management Public Company Limited, Royal Irrigation Department, and other government agencies in order to monitor situations from various water resources. The team is also responsible for urging the water management of the Eastern region to ensure adequate water for all sectors by joining reservoirs with main rivers to maximize benefits before releasing water to the sea.

Recycling water from waste water treatment is another alternative which SCG utilizes to reduce water usage in our production process. All businesses strive to educate and encourage the implementation

of water recycling equipment. For example, SCG Chemicals can recycle up to 970,000 cubic meters of wastewater by using a reverse osmosis process.

Similarly, the cement production process has been trying to reduce public water usage by creating a reservoir in the plant area. Since water in the cement production process is mainly used for the cooling system, the factory can operate in a close loop process and reserve wastewater to be reused. This procedure helps to reduce water withdrawal by up to 60%.

Reinforcement with Suppliers

SCG expands the sustainable development concept to our supplier to increase the competitive advantage and raise the organizational image by providing consultation to our suppliers on Total Quality Management (TQM) and Total Productive Maintenance (TPM) principles. This consultation also includes efficient water utilization. For example, one business partner, an ink manufacturer, proceeded to analyze ink production process and was able to reduce the problems of ink quality, increase accuracy and decrease water usage by at least 15%.

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Previously, in the area of Wang Sala sub-district villagers had to use ground water for agricultural activities. After SCG Paper established Wang Sala plant, treated water has been supplied to villagers for farming rice, sugarcane, corn and other vegetables since 1991. Regularly, people from the plant will come to talk to villagers. If we need any assistance, we will tell and discuss with those people as friends. If there is any difficulty, they will come and solve it quickly. Regarding, quality of supplied water from the plant, there is no problem at all. The water is not harmful and does not cause skin rash. Yield of rice and sugarcane also meets with standards. Once, when the water is pumped from the farmland, I often find snakehead fish and climbing perch and then free them back to natural water sources.

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Wirat Chaiprapankoon | Rice and Sugarcane Farmer
Kanchanaburi Province



Responding to Customers' Needs

SCG develops our products with innovation that can respond to customers' needs on conserving water by introducing water-saving products. For example, SCG implemented water-saving sanitary ware that can conserve water by more than 12.5%. In addition, our SCG 100th Year Building has also installed the water-saving sanitary ware together with using recycled water for flushing and watering the plants on our property, resulting in reducing water usage by at least 6 Million liters per year. This implementation has made our head office building become an ASEAN water-efficient building prototype.

Challenging Targets

SCG studies the possibility of water usage reduction by reusing water before it is discharged to the public. In this sector, cement manufacturing company takes the lead by storing all water from the production processes to reuse within the factory. Construction material companies, such as the CPAC Roof Tile Co., Ltd. arranged a storage pond to store and reuse all wastewater. SCG Water Management Committee has

set a goal for each product group, such as chemical pulp production that has set its target to reduce water usage by at least 25% by 2020 compared to the base year of 2012.

Employee Development

SCG is confident that all goals and targets can be accomplished due to the fact that the operators are encouraged to be creative and remain innovative. Water Management is at the heart of ensuring non-interruption of business operations. Relevant employees will receive training in the form of course-training as well as on the job training. The focus of these training sessions is set on thinking, rationale and improving processes. In particular on the anaerobic treatment system, anyone who operates the system must acquire a basic understanding of microbiology of microorganism. Simultaneously, all other employees and individuals need to understand the potential impact of production processes on the treatment system.

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Vina Kraft Paper Co., Ltd. has an anaerobic wastewater treatment system which is the first plant of SCG Paper that uses methane gas (CH₄) generated from treatment, instead of coal, as alternative fuel for boilers. The Company conducts annual training on an operation of the anaerobic wastewater treatment system for employees in Wastewater Treatment Department and encourages employees to participate in the environmental courses, conducted by governmental and private sectors, offering opportunities for employees to understand and apply new technology for their work improvement.

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Rosawan Wuttipong | Engineer in Charge of Wastewater Treatment System
Vina Kraft Paper Co., Ltd., Vietnam

