

Corporate Social Responsibility Report 2011

innovate • strength



Sahaviriya Steel Industries Public Company Limited



The Scope of Report

The 2011 report is the 3rd issue of annual Corporate Social Responsibility report by Sahaviriya Steel Industries Public Company Limited (SSI) was published and distributed to shareholders, stakeholders, investors and the public. The collected information in this report is aimed to bring better and clearer understanding about the Company. The information included business overview, management to reduce impact of climate change, safety, occupational health and environmental management, community and social responsibility activities, staff and human rights. Moreover, what SSI has emphasized in business plan is innovation, research and development, including innovation distribution.

The activities reported in this issue are related to and included the performances of companies under SSI Group to ensure that this social responsibility operation guideline is embraced and extended to those companies in the same direction.

Besides our print issue, the Company also distributed this report via www.ssi-steel.com in order to increase access to this information for the public.

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Operation with Social Responsibility Concept

Sahaviriya Steel Industries Public Company Limited (SSI) has operated with social responsibility based upon a new vision guideline and its 3-year business plan (2010 - 2012) that is “innovate premium value steel products and services for customers, generate consistent profit and sustainable value for stakeholders”. The Company consistently held social and community responsibility activities. Besides, its business operations became successful due to good governance by establishing a concept for operation and communication guidance as follows:

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This concept reflects through the Company's three main missions:

- 1) Mobilize Thai steel industry with responsibility
- 2) Innovate and mobilize Thai society to move forward
- 3) Take responsibility in environment, communities and natural resources.

Vision and Mission

Innovate premium value steel products and services for customers, generate consistent profit and sustainable value for stakeholders.

Values





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Future is approaching; we are looking forward to success. With our certain goal and strategy, we operate based upon good governance and ethics to stabilize Thai steel industry.

We keep our commitment, aiming to develop community and social responsibility activities, to promote quality of life for those living nearby while supporting those afar and to continuously care for the environment.

Because we do believe that strength in business must be in line with strength of society and environment, these strengths will lead to true sustainability.

Message from the Group CEO and President



The SSI's goal "innovate • strength" will continuously be developed with a clear and unwavering direction. Such goal is to strengthen both our business operation and social, community and environment responsibility which will eventually be transferred to every concerned stakeholder.

Dear Stakeholders,

The year 2011 proved to be a very challenging year for Sahaviriya Steel Industries Public Company Limited (SSI), as it was full of difficulties and obstacles. However, the Company managed to overcome those challenges due to our commitment in the "innovate • strength" concept.

The steel industry encountered turbulence affected by various domestic and global natural disasters, comprising a flood disaster in Queensland, Australia, a deadly earthquake in eastern Japan, our own flood disaster in the central region of Thailand and the economic crises in Europe. Amidst those difficulties, the Company achieved a certain major development which was the acquisition of Teesside Cast Products (TCP), an integrated iron and steel making plant, from TATA Steel Group. The plant was renamed SSI Teesside (SSI UK) and SSI has begun SSI UK's restart project and expected to produce slabs in 2012. This project will strengthen the Company's growth and business sustainability in the long term. With the vertical integrated steel business and strategic location, SSI has gained advantages over competitors in the long run.

Meanwhile, the development of our community, environment and social responsibility remains active. The activities were centered on sustainability and in-line-with the business concept. As a result, the Company received CSR Awards 2011 from the Stock Exchange of Thailand as a listed company outstanding in operation with corporate social and environmental responsibility.

Following are the major social responsibility activities:-

- **Climate change impact reduction management**

SSI has continuously operated to reduce impacts of climate change through various projects and activities. In 2011, the Company reduced carbon dioxide (CO₂) emission at 13,485.82 tons and total CO₂ emission reduction from the production accumulated to 76,884 tons since the management project began in 2007. Meanwhile, the Company purchased 9 categories of environment-friendly products (Green Purchasing) and aimed to increase purchasing to 15 categories in 2012. Besides, SSI participated in 3 important programs including Dissemination of Korea Voluntary Emission Reduction Program of Thailand stage 2 (KVER 2) with Thailand Greenhouse Gas Management Organization (Public Organization) and Korea Energy Management Corporation (KEMCO), as well as, a project on training and consulting on energy management system ISO50001 with Thai Industrial Standards Institute (TISI).

- **Safety, environmental and occupational health management**

With strong support from the management team who focused on prevention and reduction of work accidents, the statistic figures of work accidents tended to decline. According to the Company's campaign on safety regulations or SSI-OK, in 2011, the Loss Time Injury Frequency Rate (LTIFR) dropped to 2.14, from 3.23 in 2010. The operation following the plan by the Vehicle Transportation Control Working Committee of Sahaviriya Group showed that the average rate of transportation



violation in community declined to 4.25 percent in 2011, from 29 percent in 2010 and the communities were more satisfied with our operation.

In terms of environmental management, the results of an examination on the quality of water, the quality of air emitted from the plant's chimneys and the quality of air in the atmosphere around the community proved to be better than the standard required by the government. As a result of this, the Company was granted the Certificate of Green Industry in Level 3: Green System from the Ministry of Industry because of its systematic environmental management and its continuous monitor, evaluation and revision for consistent development. Moreover, the Company was awarded the Prime Minister's Industry Award in the category of Energy Management.

- **Community and social development and involvement**

The Company consistently carried on its social responsibility activities, comprising creating strength among disadvantaged, organizing the Bangsaphan International Triathlon 2011, which was held for the second time and attracted 159 local and foreign athletes, and the Iron Man Minimarathon that gained up to 2.5 million baht from the event to support 23 foundations and organizations for disadvantaged. The Company also cosponsored "Bangkok Triathlon" sport event held by Rajpracha Samasai Foundation and gained the fund of 608,500 baht to help people affected by leprosy and HIV.

Other social responsibility activities included 48 projects that have been beneficial to 10,975 people in total. In particular, the SSI Arsa, a project to create voluntary spirit culture in the organization, was held four times over the past years and expanded through 16 minor activities participated by 1,782 company staff volunteers. The overall time spending on the project was 14,256 work hours and gained cooperation from 565 community residents.

Although the flood disaster in central Thailand did not affect the plant, the Company was concerned about its effects and provided 1 million baht through various organizations to support temporary shelters for 51 company staff and their families. A rescue team of 35 SSI Arsa staff was formed and managed to help 46 families of the company staff. Besides, as suggested by West Coast Engineering Company Limited, innovative steel boats were built and 175 boats were given to a number of organizations who required the boats to help flood victims.

- **SSI Staff**

In 2011, the company staff took responsibility in more challenging jobs which involved trust and good cooperation between staff and the Company, systematic personnel development from management to operational levels, teamwork and individuals by using various methods including assignment to work overseas, training/seminars, skill development, training by doing, for instance. Those factors helped SSI staff to gain high capability and work happily under SSI value. As a result, SSI received the Excellent Workplace Awards on labor relations and welfare for 9 consecutive years.

Besides, the cultivation of social and environmental responsibility concept together with the Company's voluntary culture has gained admiration and praises from community residents and the general public during normal and emergency periods. Whenever the disaster occurs, SSI Arsa staffs enthusiastically provide their support and become a role model for the community.

- **Innovation, research and development and innovation distribution**

The Company held an innovation contest, focusing on innovative products or items and innovative processes. There were 450 projects of innovative concepts that have been transferred through the process of innovative creation in 2011 and 22 of them were already realized and in actual use. Meanwhile, the Company's the Innovate Premium Value Product Working Committee cooperated with the customers to further develop the products. As a result, in 2011 the Company gained sales from the Innovated Value Products up to 169,634 tons or 11 percent of total sales.

Those activities were continuously held with **the business ethics, good governance and business management for achievement** within Sahaviriya Group which now comprise the new member, SSI Teesside.

The SSI's goal "innovate • strength" will continuously be developed with a clear and unwavering direction.

Such goal is to strengthen both our business operation and social, community and environment responsibility which will eventually be transferred to every concerned stakeholder.



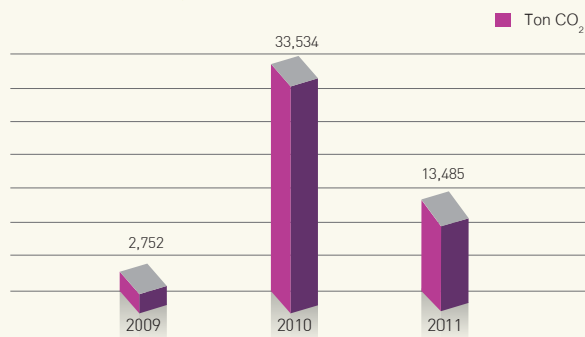
Win Viriyaprapaikit
Group CEO and President

Corporate Social Responsibility Activities Overview

CO₂ Emission Reduction Level in 2009 - 2011

Unit: Ton CO₂

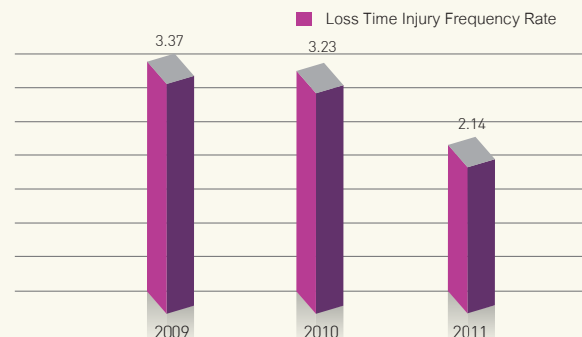
76,884



Loss Time Injury Frequency Rate

Unit: Percent

2.14



SSI strengthened flood victims in central provinces of Thailand:

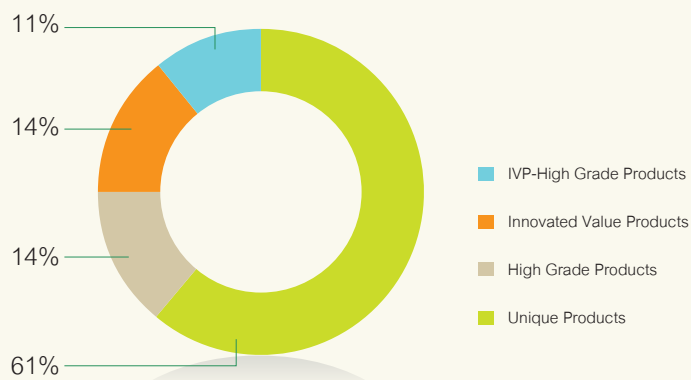
- Provide 1 million baht fund for flood victims organizations.
- Support temporary shelters for 51 SSI staffs and their families.
- Form a special mission rescue team with 35 SSI volunteer staffs to help 46 flood victim families.
- Develop 175 innovative steel boats for charity organizations to help flood victims.

SSI strengthened the society and communities:

- Arrange "Bangsaphan Triathlon Thailand Championship & International Championship 2011" (159 domestic and international athletes joined the triathlon).
- Gain 2.5 million baht from arranging "Thailand Iron Man Mini Marathon" to help 23 vulnerable people organizations.
- Support "Bangkok Triathlon 2011" and handed over 608,500 baht to help people.
- Arrange 48 CSR projects, 10,975 people received help from these projects.
- Arrange 4 SSI Arsa and "Roi Kwam Dee Pan Duangjai SSI Arsa Project" with 16 activities.
- 1,782 SSI staffs who have shared 14,256 man hours and 565 local community people who have joined the activities.

Premium Value Products (PVP) Sales Ratio

Unit: Percent



Sales Volume of Premium Value Products

169,634 Tons
11%

SSI strengthened its innovation:

- SSI staffs shared 450 innovative ideas.
- 22 ideas were practically used.
- Sales volume of Premium Value Products was 169,634 tons or 11 percent of total sales.

Rewards:

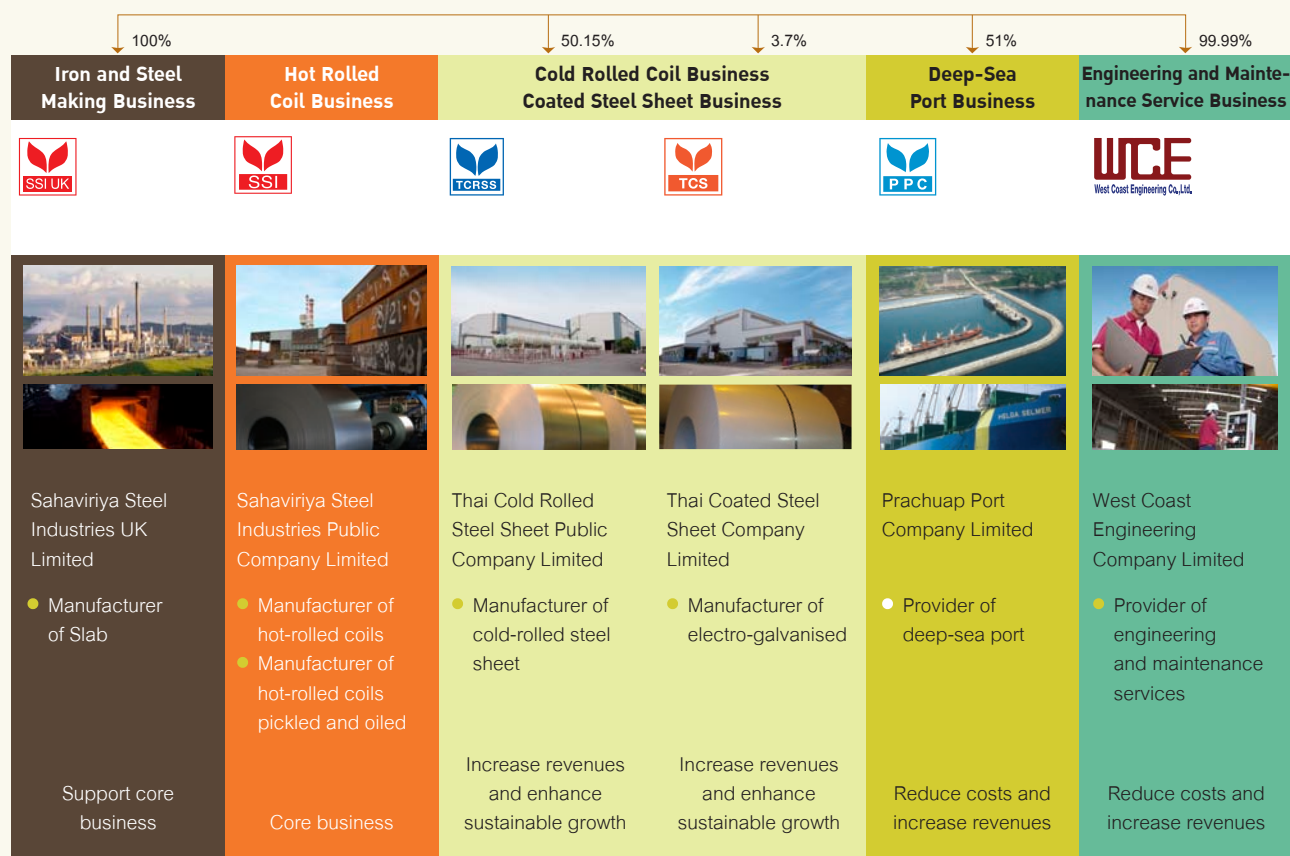
- SET Awards: CSR Awards 2011
- Prime Minister's Industry Award 2011 for Energy Management
- "Green System Level 3 (Green Industry)" Certification
- Certificate from Thailand Greenhouse Gas Management Organization, as a pilot company who launched Organization Carbon Footprint (Public Organization)
- Honorable Plate for Energy Saving from the Energy Policy and Planning Office, Ministry of Energy
- National Outstanding Industrial Establishment Award 2011 in Labour Welfare/Relations Category for 5 consecutive years

Corporate Information and SSI Group Structure

Sahaviriya Steel Industries PLC or SSI is the ASEAN's largest fully-integrated flat steel producer with 4 million tons annual capacity of hot rolled steel sheet in coils (HRC). SSI focuses on the development and production of high-grade steel sheets to cater to the region's growing demand in various sectors such as automobile, energy, transportation and construction sectors. Sahaviriya Steel Industries UK Limited ("SSI UK"), a wholly-owned subsidiary, acquired a fully-integrated iron-steel making facility located at Teesside in the northeast of UK. The 3.6 million tons per annum steel plant, now renamed SSI Teesside, will supply high-grade steel slabs to feed SSI's growing demand along with many other rolling mills around the world. In addition, SSI has joint-venture investments in downstream plants: Thai Cold Rolled Steel Sheet PLC ("TCRSS") - Thailand's first and largest cold roll mill, and Thai Coated Steel Sheet Co., Ltd. ("TCS") - Southeast

Asia's first and largest electro-galvanizing line. All SSI's plants in Thailand are located on a world-class coastal industrial site in Bangsaphan, Prachuap Khiri Khan province, 400 km. south of Bangkok on the western peninsula of Thailand, where they are efficiently integrated with its privately-owned deep-sea port (Prachuap Port Co., Ltd. or PPC), which allows import of raw materials and export of finished products on a large economy of scale. SSI extends its engineering capabilities into its wholly-owned subsidiary, West Coast Engineering Co., Ltd. or WCE, which specializes in engineering, maintenance, spare parts production, fabrication, erection and commissioning service. Our people's passion and energy is captured in the Company's vision statement - "innovate premium value steel products and services for customers; generate consistent profit and sustainable value for stakeholders."

SSI Group Structure



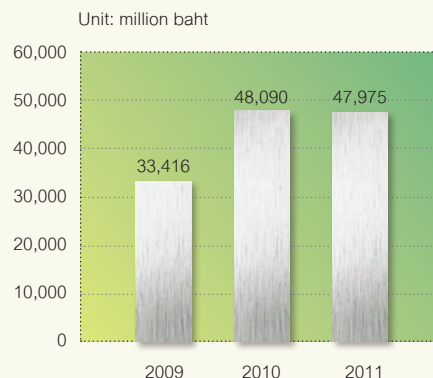
Business Overview and Economic Performance

In 2011, steel price was quite volatile due mainly to turbulence from the EU economic crisis, a slow domestic economy, a slowdown of steel demand in the final quarter of 2011 and the flood disaster. Moreover, other factors included the effect from imports of hot-rolled steel sheets dumped into the market from China and Malaysia, the imports of Boron-mixed hot-rolled steel sheets from China, HRC dumping from Korea and imports of cold-rolled steel sheets dumped into the market from China, Taiwan and Vietnam. Those factors reduced domestic demand for hot-rolled steel sheets for cold rolling and caused a drop of revenue of Sahaviriya Steel Industries Public Company Limited (SSI) from domestic market. However, in 2011 the Company gained more revenue from Iron and Steel Making Business in the UK which helped the Company to record a total sales and services of 47,975 million baht, a slight decrease of 0.2 percent from 2010. Those revenue included 37,699 million baht from Hot-Rolled Coil business (1.57 million tons of HRC and 1.56 million tons of HRC production volume), decreased 21 percent YOY and 9,936 million baht from Iron and Steel Making Business (0.68 million tons of coke sales volume and 1.25 million tons of coke production volume). As a result, the Company recorded a total net loss of 981 million baht or 0.06 baht net loss per share.

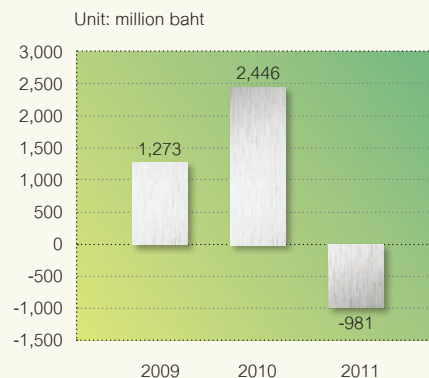
In marketing aspect, the Company continued to focus on expanding sales of "Premium Value Products" which earns a higher margin to help reduce the impact of price and volume volatilities usually seen in commercial grade products. In 2011, SSI recorded HRC sales volume of 1.57 million tons with the sales proportion of "Premium Value Products" at 39 percent of total sales volume. In addition, the Company also constantly developed "Innovated Value Products", which is part of its "Premium Value Products", to support customer's demand. The Company's effort resulted in sales and delivery of 169,633 tons in 2011.

For investment projects, the engineering project of SSI UK Restart Project is expected to be completed within the first quarter of year 2012. Later, the plant will start its production of slabs which will strengthen SSI with the ability for long term competitiveness due to having secured source of slab supply with required quality at more stable prices. These will enable the Company to achieve its two key strategies including "innovate premium value steel products and services for customers" and "create world-class business."

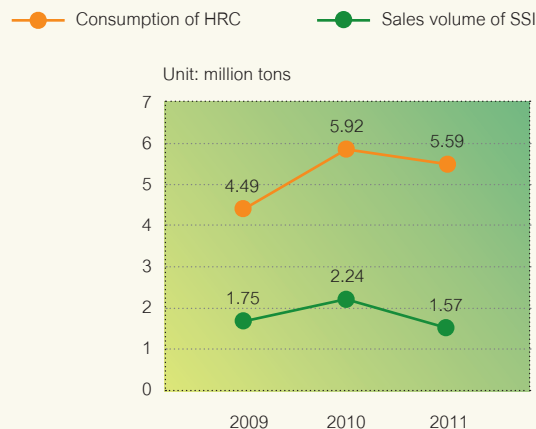
Revenue from sales and services



Net profit (loss)



Consumption of HRC in Thailand, compared to sales volume of SSI



Social Responsibility Dimension of SSI

Management for Reduction in Impacts of Climate Change

Sahaviriya Steel Industries Public Company Limited (SSI), as the ASEAN's largest fully-integrated flat steel producer and a leading operator in Thailand's steel industry, realizes the importance of climate change problems. The Company has managed to reduce the impacts of climate change through various projects and activities. By following the policy on involvement in social and environmental development through strategies, those projects and activities helped achieve the Company's vision on "innovate premium value steel products and services for customers, generate consistent profit and sustainable value for stakeholders." Those activities included as follows:

Role of the Climate Change Initiatives Committee

To create leadership in management to reduce impacts of global warming in steel industry, the Company's Climate Change Initiatives Committee focused their operation on:

1. Create leadership of changes to reduce global warming in steel industry for prevention and reduction of the climate change impacts.

**SSI reduced
cumulative CO₂
emission, since 2007
to 2011, 76,884 tons of
CO₂ equivalents.**



2. Carry on the project on climate change management internally and externally in cooperation with government organizations, institutes and communities.

3. Create brands and publicized activities about climate change reduction to introduce positive image of the Company to the public.

The committee held activities to reduce changes and impacts of climate change through various projects concerning energy and waste management. The committee also employed public relations methods to inform the staff and the general public about the impacts of climate change, used a guideline to reduce the impacts and cooperated with government organizations on climate change. Moreover, the Company applied a principle of product life cycle assessment to environmental activities to reduce impact and adjust environmental activities continuously, in accordance with the policy on involvement in social



and environmental development as well as corporate social responsibility. Therefore, SSI reduced energy use in production equal to a reduction of 76,884 tons of CO₂ equivalent, from 2007 when the project took place until the end of 2011. In 2011 the Company reduced 13,485.82 tons of CO₂ equivalents.

The Results of Management to Reduce Impacts of Climate Change

In 2011, the Company targeted and planned to operate, monitor and measure the quantity of greenhouse gas reduction through several projects. Those included reduction of fuel oil, electricity, diesel oil, production waste and waste in production period, for example. To achieve that, the Company held 10 activities for reduction in greenhouse gas emission, as follows:



1. Green product is the production of new products focused on energy saving and reduction of wastes in production process. (Green product cut down 852.64 tons of CO₂ equivalent).

2. Green process is a time-improving activity to reduce waste of opportunity and electricity during production period. Operated by a number of taskforce teams, this activity included measuring and comparing the results to the measurement index used in production process, including IW, productivity, loss and energy (Green process cut down 11,357.94 tons of CO₂ equivalent).

3. Green logistics is a transport-improving activity to increase efficiency and reduce fuel use in storage and transport system of raw materials and products such as shipping products instead of using trucks. (Green logistics cut down 1,068.67 tons of CO₂ equivalent).

4. Green maintenance is a machinery maintenance activity based upon reduction in materials and disposable materials, such as reduction in foam food-containers (Green maintenance cut down 76.93 tons of CO₂ equivalent).

5. Green building is an activity to reduce use of electricity and resource in the office buildings, such as growing more plants for shade, scheduling time for air conditioners function (on-off period), turning off lights during lunch time and using CFC and HCFC free coolants in air-conditioning system, (Green building cut down 95.66 tons of CO₂ equivalent).

6. Green IT is an activity using IT technology to reduce energy use, such as using video conference between Bangkok office and the plant office in Prachuap Khiri Khan, replacing CRT screens with LCD screens, using remote access programs, reducing trips of the Company staff (Green IT cut down 33.72 tons of CO₂ equivalent).

7. Green procurement is a purchasing activity for eco-friendly products and services such as products with energy saving label, green label or Cool Mode labels.

8. Green management is an activity based on 3R (Reduce, Reuse and Recycle) principle that focused on reducing production waste, separating garbage and waste recycling.

9. Green network is an activity operated by the green network within the organizations through their representatives. It is aimed at encouraging and creating awareness of global warming among staff through activities on Green Day on the third Friday every month.

10. Green CSR is the community-involving project that focuses on natural and environmental conservation, including forestation project, 84,000 bulbs of vetiver grass cultivation project, beach trash collecting project and Song Lor Rak Bangsaphan (Car Free Day) project.

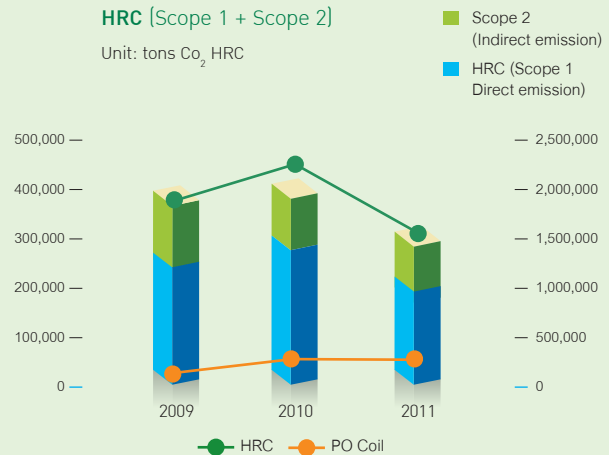
According to the record of these activities, in 2011 SSI could reduce CO₂ emission per ton of production at 0.10 percent per ton HRC (or cut down 0.2 kg. of CO₂ per ton HRC. The figure was low due to a slowdown of the market in 2011, causing the Company to occasionally turned off the machines and that made them unable to worked to full capacity) and 47.15 per ton PO Coil (cut down 14.15 kg. of CO₂ per ton PO Coil due to the Company's replacement of acid treatment by Acid Regeneration Plant with external recycling) respectively compared to those in 2009.

Management of Ozone Depleting Substances

Thailand signed an agreement to join the Montreal Protocol on Substances that Deplete the Ozone Layer on July 7, 1989 with the commitment to reduce and end the use of ozone depleting substances later. Recent scientific research found that a coolant called HCFC-22 or R-22, which is recommended to substitute CFC, also depletes ozone layer but with less effect than CFC. Currently, new coolants are available, thus the Company replaced R-22 in the air - conditioners with a coolant called BPX4400 that depletes

HRC (Scope 1 + Scope 2)

Unit: tons CO₂ HRC



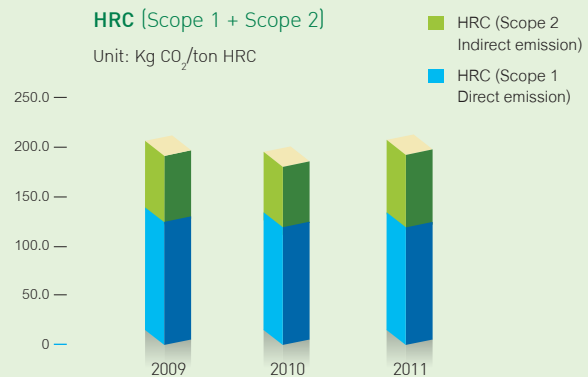
Note:

- : Employed a guideline of creating carbon footprint for organization level, ISO 14064-1:2006 and IPCC.
- : Scope 1 Greenhouse gas caused by combustion in production process and raw materials and products transportation in SSI (excluding transport for pool cars).
- : Scope 2 Greenhouse gas caused by energy production from external sources including electricity (excluding electricity used at the Company office in Bangkok).

In 2011 Greenhouse gas emission tended to decrease in accordance with the decrease of productivity.

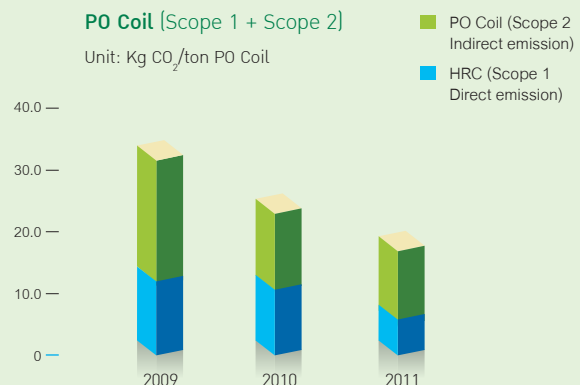
HRC (Scope 1 + Scope 2)

Unit: Kg CO₂/ton HRC



PO Coil (Scope 1 + Scope 2)

Unit: Kg CO₂/ton PO Coil



no ozone layer. The result showed that SSI could save more than 10 percent of electricity use and could cut down new R-22 use for 11.4 kilograms or equal to the greenhouse gas emission reduction of 20.73 tons of CO₂ equivalent. Besides, the Company used a clean method for air conditioners maintenance by using a machine pulling R-22 back to collect and reuse later instead of emitting it into the air. Then, 65 kilograms of R-22 were collected and reused or equal to the greenhouse gas emission reduction of 117.65 tons of CO₂ equivalent. In the future, the Company planned to use more of BPX4400 or other no-ozone depleting substances in air-conditioning system at the office buildings of the plant.

Eco-Friendly Purchasing

Promoting stakeholders in supply chain to realize and cooperate in environment protection is another important method that SSI always pays attention especially to cooperation in environment protection with business partners.

Regarding SSI's Green Purchasing Procedure in 2008 as a guideline for making less purchase of products that affect the environment, through the process of raw materials sourcing, production, transportation, utilization and expired product management than other products for similar functions. The Company continued this practice; in 2011 SSI had 9 groups of eco-friendly products due to 2 more new groups added from the Company's 2010 purchasing list and aimed for 15 items of green products in 2012 while supporting service providers with energy saving operation, too.



Protection of Biodiversity Community

Ecosystems and biodiversity in Bangsaphan district are important to many creatures. They are also related to living of several communities in the same area. The operation of the plant inevitably affects several surrounding ecosystems. SSI has operated with caution meanwhile the Company has reduced and controlled those effects seriously. The Company also cooperated with the Environmental Management and Promotion Center of Sahaviriya Group in several projects on biodiversity that serves as a key indicator for the rich of community ecosystems. Those projects included:

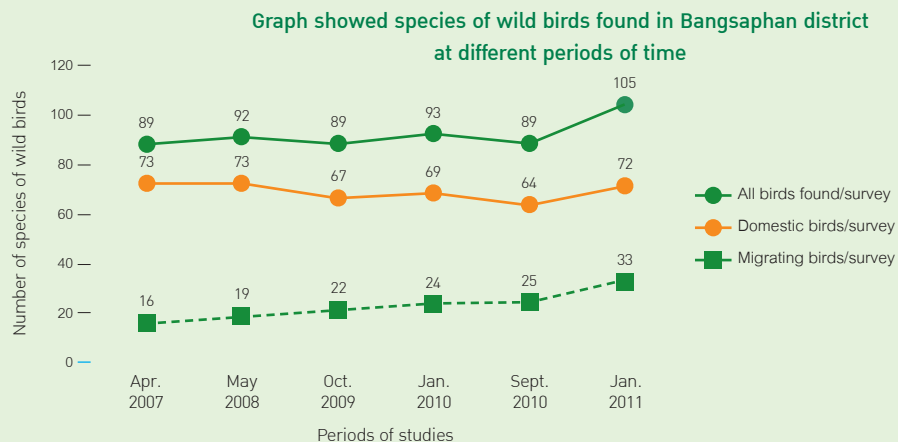
The Formation of A Surveillance Network to Protect Rare Species of Marine Creatures: SSI realizes the importance of natural resource especially the Company's utilization of land near Bangsaphan coastline where rare sea creatures often appeared such as dolphins and whale sharks. SSI and the Environmental Management and Promotion Center of Sahaviriya Group formed a network for surveillance and protect rare species of marine creatures in the area. The network included fisherman communities in Thab Sakae, Bangsaphan and Bangsaphan Noi districts in cooperation with government organizations, local administration organizations, local marine and coastline environmental research institute. The network looked after and protected rare species of marine creatures and natural resource. Meanwhile, the Company regularly held activities to raise consciousness amid local residents in the area to see the importance of helping protect those creatures. Rare species of marine creatures are important indicators of fertility of marine ecosystems.

Through this project, the Company produced and provided public relations documents with useful information for fishery. The documents aimed to raise awareness on protection of marine resource offered the members of the network statistics of rare marine species in the areas continuously. The members were also invited to participate in marine resource protection activities on special public holidays. The activities were to engage the community in surveillance and proper help rare species of marine creatures,

including educating members about sustainable fishery that affect none of those species and laws on different types of fishery boats. At present there are more than 200 members of the network.

The Monitoring Project of the Impacts on Biological Resources: This project is a wild creature monitoring around the plant project of Sahaviriya Group in Bangsaphan district, Prachuap Khiri Khan. It also gives analysis of changes in types of animal, relative abundance levels and wild creatures living in nature that are divided into 4 groups: Class Amphibia, Class Reptilia, Class Aves and Class Mammalia. The project focused on studying wild birds in the class Aves because birds are vertebrate creatures that are most varieties in Thailand. They can live and feed in all ecosystems. Being flying creatures enable birds to relocate to new habitats quickly and in long distances when ecosystems, food and climate have changed and decreased. SSI and Sahaviriya Group's plants are located in the area adjacent to Mae Rumphueng wetland where is considered a main habitat and feeding of many local birds and migrating birds. Thus, the Company and the Environmental Management and Promotion Center of Sahaviriya Group organized a survey study on the variety of birds in the wetland around industrial complex as a surveillance on the effects from the operation of Sahaviriya Group on the wetland. Conducted by experts from Zoology Department, Kasetsart University's Faculty of Sciences, the study included surveying and gathering information about type of birds and population counting systematically. The findings showed that the variety of the birds in that areas tended to increase significantly each year, reflecting that fertility of the area was not affected by the operation of SSI and Sahaviriya Group's steel industry and the environment there was well cared.

The conservation and development of Pah Klang Aow national park and Mae Rumphueng national park: This project was initiated by the members of community network to promote environment and improve quality of living in Bangsaphan district. The network has more than 2,000 members who realize the importance of ecosystems in the areas. Those areas consist of 1,200-rai Pah Klang Aow



national park prominent with *Dipterocarpus alatus* Roxb (Yang Na) and 4,550-rai Mae Rumphueng national park which located in Pah Klong Mae Rumphueng National Conservation Forest, including 1,500-rai land forest and 3,050-rai mangrove forest.

With the network's aim for sustainable development, the areas were developed to be both community park and learning centers of mangrove ecosystem. Therefore, SSI and other companies under Sahaviriya Group answered the community need by co-advising on academic aspect and supporting budgets for its operation in order to extend a scope of monitor and development from the organization to community and the sustainably (or sustainable) society in the long term.

Currently, those areas already became the learning centers for mangrove ecosystems. There are the areas for growing mangroves and releasing of fish larvae into the water at Mae Rumphueng national park. The walkways were built for Nature Trail at Pah Klang Aow mangrove forest and a boyscout campsite at Pah Klang Aow national park was renovated to facilitate campers or visitors to learn in Pah Khlong Mae Rumphueng which is connected around. These areas became a good natural classroom for the youths in the community.

Cooperation with External Organizations

In 2011 SSI had aims and was willing to participate in various climate change projects and activities with government organizations and external institutes including:

- Cooperate with Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) and National Metal and Materials Technology Center (MTEC) in a pioneer project to create carbon footprint for organizations.
- Cooperate with Thailand Greenhouse Gas Management Organization (Public Organization) or TGO and Korea Energy Management Corporation (KEMCO) in the Dissemination of Korea Voluntary Emission Reduction Program of Thailand Stage 2 (KVER 2).
- Cooperate with the Ministry of Industry's Industrial Works Department in a training and consulting project on energy management system ISO 50001 during September 2011 and June 2012.

As for the main activity in the future, SSI will enlist greenhouse gases in the greenhouse gas inventory based on the concept of carbon footprint for organizations in order to evaluate volumes of greenhouse gas emission each year. Then, the data will be analyzed, planned and later conducted for a program to reduce or control the emission of green house gas from the main source.

Besides, SSI will create an energy management system ISO50001: 2011 and request for international accredit that will enable the Company to best control and use energy as well as reduce greenhouse gas emission from waste of energy use.

Safety, Occupational Health and Environment

SSI still focused on operating with social and environmental responsibility and applied such concept through supply chain to set goals and plans. Those included safety and occupational health management for SSI staff and outsource contractors, environmental management in both local and regional levels as well as acceptance of suggestions and opinions and cooperation with community in activities. The details were described as follows:

Safety and Occupational Health

Safety and Occupational Health Management

SSI continuously received accreditation for the management system standards on occupational health and safety: Thai Industrial Standards (TIS) 18001 and OHSAS 18001, which are international standard.

Besides, the safety, occupational health and work environment committee was appointed to oversee and provide suggestions to improve safety in all operation areas. The committee operated with cooperation from a task committee, safety staff and all staff and under the support of the management team. Their tasks focused on prevention and reduction of work accidents by using risk assessment and control procedure, setting appropriate controlling measures and promoting behavior change on safety under a campaign for safety regulations and practices or SSI-OK. This campaign has been carried on until today since 2010. According to the record of the campaign, the work accident rate tended to decline regarding the Loss Time Injury Frequency Rate (LTIFR) in 2011 at 2.14, down from the previous year when LTIFR was 3.23.

For Off-The-Job-Safety, SSI conducted a campaign on 100 percent wearing helmet and received good cooperation from the staff. Moreover, the Company became a member of the center for safety support for working with Sahaviriya Group,

which was established under the cooperation between Sahaviriya Group and Office of Welfare and Labor Protection, Prachuap Khiri Khan. This cooperation is aimed to elevate safety standards of the companies under the group while supporting the government sector with responsibility in overseeing and promoting safety in workplace.

Besides promotion of community safety, SSI cooperating with the Environmental Management and Promotion Center of Sahaviriya Group held an event of "Safety Health and Environment Week" at the outdoor sport field of Sahaviriya Group, aiming for the community to participate in and visit exhibitions, fair, performances and safety measures in the plant. Thus, it was aimed to extend knowledge and understanding about safety to the public around the plant, enable them to realize safety living and create safety conscience among the public. This will be a way to help reduction in accident rate.





General and Occupational Health Care for Staff

Employees are not only important resources but they are also key stakeholders of the SSI operation. Thus, occupational health care for Company staff is an important mission that SSI never overlooks. The Company first conducted an evaluation survey on operation risks among all staff in 2007 and the survey has been improved annually. Data from the surveys were used for setting parameter of workplace monitoring and projects to improvement. Those projects included a project to reduce dust and smoke in workplace, a project to improve lighting in workplace, a project to improve air ventilation in the hot-rolled steel sheets plant. In 2011 SSI held a project called Happy Workplace and applied it to some departments in order to promote staff to give suggestions and improve their work environment. That would lead to sustainable development of work environment, happy working staff, good environment workplace and reduction of work stress and complaints.



In 2011
SSI staff spent
15 hours per person
per year on those
training courses.

Besides, information from the survey was used to create a physical examination program for staff based on the risk in their operations. So, SSI could monitor changes in health of staff exposed to different risks at work. Although SSI created activities to reduce those work risks beyond standard requirement, the Company arranged sufficient space for both indoor and outdoor exercises including relaxing areas during work breaks. Moreover, several other organizations involved also conducted recreations, health promotion activities all year round. Those included football, futsal, volleyball, takraw, petanque, as well as aerobic dances, healthy youth contests, and health care information communication activities.

Safety and Occupational Health Care Training

Safety and occupational health training is critical to reduce work accidents and occupational illness. SSI aimed to enable all staff to learn about working hazards and proper processes and methods in operation. Those will help prevent work injury and illness, both acute and chronic, and will reduce loss and accident rates in the organization. In 2011 more than 90 SSI training courses on safety, environment and occupational health were provided. Those courses included basic training courses to create awareness among staff, skill improvement courses and advance specific skill training courses. The Company encouraged staff to continuously take the courses related to their work. In 2011 SSI staff spent 15 hours per person per year on those training courses.

Preparation for Emergency

SSI is aware of the importance of preparation for emergency incidents. Thus, the Company appointed a subcommittee on fire prevention and emergency response as the main body responsible for setting a policy and a plan based on environment and related factors at present and the future. The policy and plan are used as guidelines to prepare for possible emergency to enable the Company to recover and return to normal operation as quickly as possible after such situations. Moreover, the subcommittee is responsible for creating a guideline for emergency control, a plan for emergency response in various situations in cooperation with other plant units and a mitigation plan to reduce the effects from emergency on persons, community, environment and assets. Others were a plan to solve and recover business from interruption, a plan to properly manage information and timely communication with the public to prevent effects from interrupted communication that may affect the Company's reputation.

Besides, this committee is responsible for conducting drills in response to different emergency scenarios for in-house drills among staffs and inter-organization drills with government and private organizations in the community such as subdistrict administration office, municipal office, hospitals, local police station, and nearby business operators in case of any emergency beyond SSI capability. The subcommittee is the main player in cooperation with the Office of Safety and Environment in continuously conducting fire drills, chemicals spill control, evacuation, first aids and resuscitation as well as responses to LPG leakage, flood and environmental emergency. The committee also has responsibility to review and always keep the plan updated.

Safety Management of Raw Materials and Products Transportation

SSI paid an attention in safety transportation and set up a working committee to oversee transportation operations of Sahaviriya Group by controlling the practices of transportation staff. The aims are to prevent road accidents for raw materials and products transportation as well as to ensure that our staff and community get safety protection. The committee's responsibility included examining and allowing only those with legal licenses to drive, training and revising drivers to follow safety measures set and strictly examined. The committee also conducted transportation plans to avoid rush hours and crowded residential areas in order to reduce greenhouse gases during heavy traffic and risk for possible accidents. Besides, they have a data presentation and monthly meeting for information update and solutions.

Throughout the past year, SSI in cooperation with stakeholders set a direction and monitored the committee's performance through the mobilizing committee of community leader council. The mobilizing committee consisted of representatives from three parties including community leaders, government authorities and executives from Sahaviriya Group. The mobilizing committee had meetings to follow up and listen to suggestions and complaints related to Sahaviriya Group transportation from the community to improve or resolve later. Moreover, the Company increased a channel to monitor and control vehicles by installing surveillance cameras in areas that may need monitoring in the residential zone and posting warning or campaign signs for safety transportation for drivers. Other activities included training for drivers and seminars for transportation operators to inform them about the policy and an operation guideline on safety transportation. According to the record of these activities, the average rate of practices violating transportation regulations in residential zones dropped to 4.25 percent in 2011, from 29 percent in 2010 and the community gained more satisfaction over this operation.

Environment Environmental Management

SSI has been using environmental management standard ISO 14001 since 1999 and gained accredit continuously. The SSI's Safety and Environmental Office acts as the major body for environmental management. Working together with other production units at the plant, it appointed the Supervisor and Operator for pollution treatment systems via Water Pollution, Air Pollution and Industrial Waste Management control required by law. Concerning the areas outside the plant compound, SSI cooperated with other companies under Sahaviriya Group in Bangsaphan district by having The Environmental Management and Promotion Center of Sahaviriya Group as a hub for environmental management and promotion for awareness and cooperation between the community and the plant through different activities all the year.

Resource Management in the Production Process

Raw materials and products

SSI imports main raw materials that are steel slabs from several sources with quality control regarding the standards and customer demand. In 2011 the Company targeted raw material waste in production process at not more than 2.12 percent. The result from the operation showed that the waste was kept slightly lower than our target, 2.05 percent. In 2011, SSI produced 1.58 million tons of hot-rolled steel sheets and 0.10 million tons of hot-rolled steel pickled and oiled sheets totally.

Energy management

The production process of hot-rolled steel sheets uses energy from fuel combustion and electricity as main sources of energy. Meanwhile, hot-rolled steel pickled and oiled sheet production process requires electricity as main energy source. Fuel combustion is under 2 percent sulfur mixed fuel oil that is available locally while electricity is bought from Provincial Electricity Authority. In 2011 the plant had energy consumption rate as follows:



Energy	Hot-rolled steel sheet plant	Steel pickled and oiled sheet plant
Fuel oil (kcal/kg Slab)	351.57	LPG 20.42 Kcal/kg PO Coil
Electricity (kwh/Ton)	115.06	121.48

Water management

The plant operation was designed for recycling water to use continuously in production process for hot-rolled steel sheets and had a 2.4 million cubic meter - size water reservoir constructed for water management. Those enabled SSI to produce hot-rolled steel sheets without causing competition for water that is precious resource for community and agricultural sectors in the community. Besides, SSI could maintain a commitment to the community following a social contract that SSI would not take water from the dike during drought season when the water level was lower than 2.2 meters. SSI operated in accordance with the social contract seriously without breaching it.

Regarding wastewater treatment, SSI uses chemical treatment system for water used in production process of hot-rolled steel pickled and oiled sheets. The Company also installed sand filter system and grease trap system in production process of hot-rolled steel sheets and biological treatment system for wastewater from utilization and consumption at the plant. The quality of water in all processes was regularly examined by staff and occasionally rechecked by an external organization authorized by the government. Besides, SSI had the water recycling system designed for zero discharge of wastewater from the plant.

Over the past year SSI kept control of water consumption in production process. The water consumption rate in hot-rolled steel sheet production process was 0.69 cubic meter per ton of production, which was slightly higher than the rate in 2010 due to not much productivity causing the machine to run under-capacity. Meanwhile, the water consumption of hot-rolled steel pickled and oiled sheet production process was 0.23 cubic meter per ton of production; that showed a better tendency compared to that rate in 2010 when the consumption rate was 0.37 cubic meter per ton of production.

Chemical consumption

Production process for hot-rolled steel sheets and for hot-rolled steel pickled and oiled sheets requires several chemicals. Over the past year SSI used no new chemical and chemical consumption rate in various processes had no tendency to increase. Besides, according to the result from an examination of the operation based on ISO 14001 and TIS/OHSAS 18001, chemical control and management at the plant still met practical standards. There were a number of suggestions for improvement and those involved already brought them to create a plan for adjustment.

Pollution Control

Waste water quality and quality of related water source

SSI's production process was designed for zero discharge of wastewater. Still, the Company continuously monitored quality of water in the plant and from the public water sources as well as co-examined quality of sea water in nearby areas over the past year as follows:

1. Examine quality of water in the plant monthly at 4 stations by an external organization authorized by Industrial Works Department. Based upon an examination of 16 - 18 indexes per station, the result showed quality of water at the plant better than the Industrial Effluent Standard for Industrial Plants issued by the Ministry of Industry No. 2, B.E. 2539 in all items.

2. Examine quality of water in public water sources near the plant every 6 months at 3 stations by an external organization authorized by Industrial Works Department. The three stations were at Tha Kham Canal, at the early and the end of Mae Rumphueng Canal. Based upon an examination of 10-index per station, the result showed quality of the water from the canals better than the surface water quality standard (Class 3) Notification of the National Environment Board, No. 8, B.E. 2537 in all items.

3. Examine quality of ground water every 6 months from 9 stations by using an examination of 9-index per station. This examination is to keep surveillance over any change possibly happened since Thailand has not set any standard related yet. Over the past years, no significant change has been found from the examinations.

4. Cooperate with Environmental Management and Promotion Center of Sahaviriya Group in an examination of sea water quality at the port of Prachuab Port Company Limited. Based upon an examination of 24-index in January 2011, the results fell into the range of standard in all items.

Besides the examinations by external organizations authorized by Industrial Works Department, SSI and Environmental Management and Promotion Center of

Sahaviriya Group also held a community co-examination program regularly. SSI welcomed several group visits of students and teachers from primary and secondary schools in the area. The visitors received a lecture on the process of environment quality care, the process of wastewater treatment of the plant and basic information about water and air quality examinations. They learned to collect and examine samples of water themselves as well as discuss the results altogether. The project received a good response from the groups of students and teachers, confirming their confidence in environment care by the Company that was always ready for examinations by the community.



Quality of air emitted from the plant's chimneys and quality of air in the atmosphere around the community

SSI had the plant designed for efficient use of fuel in the production process of hot-rolled steel sheets by installing burning system controlled by computer, keep sulfur level mixed in fuel oil at under two percent. Thus, air emission from SSI's plant had better quality than standards and requirements according to. The measures defined in the Environmental Impact Assessment (EIA).

For the production process of hot-rolled steel pickled and oiled sheets, SSI installed acidic scrubber system to treat waste gas in both production line and Acid Regeneration Plant unit (ARP). Air emission from the plant was better than standards and requirements according the measures defined in the Environmental Impact Assessment (EIA).

The quality of ambient air around the plant has been occasionally monitored and examined in various parameters related to the plant throughout the year. In 2011 the measurement of air quality at 5 stations including Ban Tha Kham, Ban Tha Manao, Ban Klang Aow, Ban Thabmon and Ban Bo Thonglang relied on various parameters as follows:

1. 1-hr average value of sulfur dioxide (SO_2)(mg/m^3)
2. 1-hr average value of oxide of nitrogen (NO_x) (mg/m^3)
3. 1-hr average value of total suspended particulates (TSP)(mg/m^3)
4. 1-hr average value of hydrogen chloride (HCl) (mg/m^3)
5. 1-hr average value of particulates matter < 10 microns ($\text{PM}-10$)(mg/m^3)

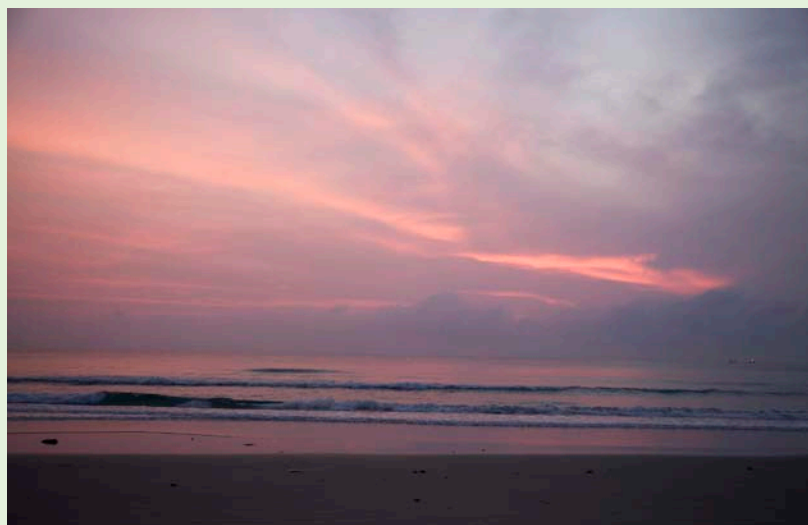
The result of air quality based on those parameters showed air quality at all stations far better than standards and remained in the same range of the previous measurement at all stations and in all parameters.

Moreover, SSI cooperating with Environmental Management and Promotion Center of Sahaviriya Group held an educational project on an examination of rain water quality for community to help monitor acidic rain. The result showed the rain acidic-alkaline property at 7.1 that referred

to no tendency of acidic rain in this area. The criteria figure was under 5.6, indicating high tendency of acidic rain. This activity was seen as cooperation with the community to help them gain knowledge and understanding so they would have more confidence in quality of rain at Bangsaphan district.

Waste management

SSI focused on reducing quantity of waste at its origin through several projects. Those included targeting for raw material loss in production at not more than 2.12 percent and later achieving slightly beyond target, at 2.05 percent. A project for humidity reduction in sediment from wastewater treatment system at under 15 percent achieved its goal. Other projects included a project for paper waste reduction from the office by campaigning for two-sided paper use and a project to separate plastic and glass bottles from other trashes to resell later. Besides other projects which help



reduce waste from the plant were a project of organic fertilizer from dead leaves or plants in the plants, a project to produce biomass fertilizer from food scraps, and a contest on creation from leftover items.

In 2011 SSI totally produced 66,719 tons of industrial waste. Out of that waste, 99.22 percent were eliminated by recycling process while 0.78 percent was sent to secure landfill. The Company spent 10.2 million baht on waste management.



Operation Following Laws, Rules and Regulations

SSI is abided to operate by following laws, rules and regulations especially those related to environmental management. Those are, for example, provision of performance reports following the measurement for reduction of the effects on environmental quality, request a permit for industrial waste disposal, provision of result reports from pollution control system, result reports from analysis of fuel oil quality and reports on quantity of scale etc. SSI completely achieved those on time. In 2011 SSI never violated any environment-related laws or regulations and received no legal order to halt or stop operation as well as no fine for any legal violation.

Green Industry Project

SSI realized the importance of steel industrial operation to be in harmony with communities, society and environment. Thus, the Company signed a memorandum of understanding with the Ministry of Industry in the development of Green Industry. Under this Green Industry project, SSI was approved and certified as "Green Industry level 3 (Green System)" for having systematic environmental management as well as monitoring, evaluating and revising for sustainable development. This certification lasts 3 years (August 24, 2011 - August 23, 2014).

Community Opinion Survey and Participation Process of the Community in Environment Stewardship

A survey on attitudes of the community has been conducted annually among the communities around the plant. The communities are important stakeholders of SSI because the operation of the plant affects them economically, socially and environmentally in both positive and negative ways. Thus, an attitude survey enabled SSI to understand their perception through community leaders and household leaders on various effects from the operation of the plant over the year. Thus, cooperation in thinking and decision making between the plant

and the community took place through participation process at community council and village meetings, for example. Later, the conclusions from the meetings led SSI to properly hold projects in response to needs and perceptions of the community that could sustainably accommodate the community's satisfaction.

In 2011 SSI conducted an attitude survey on 367 samples from 7 villages and 1 municipality that totally consisted of 4,277 households (data in August 2011). The conclusion resulted as follows:

Subdistrict	Community	No. of Household	Study Samples (No.)	
			From Calculation	Actual Study
Kamnerd Noppakhun	Kamnerd Noppakhun Subdistrict Municipality	1,399	120	120
Mae Rumphueng	Moo 2 Ban Tha Manao	534	46	46
	Moo 3 Ban Ao Yang	177	15	15
	Moo 4 Ban Tha Kham	369	32	32
	Moo 5 Ban Pak Khlong	536	46	46
	Moo 6 Ban Klang Na	625	53	54
	Moo 7 Ban Thung Lan Khwai	119	10	10
	Moo 8 Ban Lang	518	44	44
Total		4,277	366	367

Most people in the communities were aware that the Company contributed for better infrastructure of the community, accelerating trades and creating incomes for their families as well as supporting community activities such as scholarships, promoting and supporting religion, supporting classroom materials, promoting sport activities and purchasing community products. The most satisfactory activities for the community were forestation and environmental protection and preservation, followed by other activities including scholarship provision, mangrove forest preservation, marine animal preservation such as freeing crabs and prawns, development for agricultural vocations, green youth camps etc. However, the community was worried about the operation of the plant and their three top concerns, according to a survey in 2011, including road accident problem, 10.1 percent, traffic problem,

7.6 percent, and dust particles problem, 7.4 percent, respectively. The order of their opinions decreased, comparing to the previous survey in 2010 with 6.8 percent of dust particle problem while the problems of traffic and quality of rain water were 3.7 and 2.0 percent respectively. Their worries shifted to traffic issues while the problem of rain quality became less important. Regarding traffic problems, SSI and other companies under Sahaviriya Group appointed a working committee to oversee transportation operations of Sahaviriya Group by overseeing the practices of transportation staff. The working committee also set time schedule for transportation to avoid heavy traffic hour and had video surveillance cameras installed. Moreover, they held meetings, discussions and seek a solution guideline through the community leader council to create community participation and relieve community concerns.

Results from environmental quality measurement in 2011 showed that all indicators were in the range of governmental standards:

Environmental Performance Index of Water Quality (May and August 2011)

Parameter	Unit	Analysis Result						Standard
		Tha Kham Canal		Upper Mae Rumphueng		Lower Mae Rumphueng		
		May 2011	Aug. 2011	May 2011	Aug. 2011	May 2011	Aug. 2011	
pH	-	7.7	7.4	7.3	7.6	8.1	8.2	5.0 - 9.0 ^{1/}
Suspended Solid	mg/l	10	35	26	35	14	20	-
Total Dissolved Solid	mg/l	13,750	4,950	16,400	3,080	6,667	3,180	-
Acidity	mg/l as CaCO ₃	10	19	19	10	3	3	-
Alkalinity	mg/l CaCO ₃	149	156	172	146	118	145	-
COD	mg/l as O ₂	398	266	191	113	152	112	-
Grease & Oil	mg/l	<3	<3	4	<3	<3	<3	-
Total Coli form Bacteria	MPN/100 ml	330	330	490	1,300	6,667	240	Less than 20,000 ^{1/}
Iron	mg/l	0.76	1.01	1.75	1.78	0.65	0.77	-
Manganese	mg/l	0.17	0.21	0.28	0.31	0.07	0.09	Less than 1.0 ^{1/}

Note: ^{1/} Standard: Surface water quality standard (Class 3) Notification of the National Environment Board, No. 8, B.E. 2537

Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd.
 Recorded by Mr. Thanong Viriyasahakij
 Examined/controlled by Miss Yupaporn Chanpleng (๓-204-๓-4700)
 Analyzed by Miss Narin Saiseng (๓-204-๓-4715)
 Telephone 0-2715-8700

Ambient air quality around 5 stations

Parameter	Average of minimal-maximal quantity found		Standard
	April 21 - 28, 2011	August 17 - 24, 2011	
Total suspended particulates (TSP)	0.025 - 0.056 mg/m ³	0.020 - 0.057 mg/m ³	Less than 0.330 ^{1/}
Sulfur dioxide (SO ₂)	0.016 - 0.019 mg/m ³	0.002 - 0.008 mg/m ³	Less than 0.300 ^{1/}
Nitrogen dioxide (NO ₂)	0.013 - 0.056 mg/m ³	0.003 - 0.148 mg/m ³	Less than 0.320 ^{2/}
Particulate matter < 10 microns (PM-10)	0.013 - 0.024 mg/m ³	0.010 - 0.029 mg/m ³	Less than 0.120 ^{1/}
Hydrogen chloride (HCl)	<0.001 mg/m ³	<0.001 mg/m ³	-

^{1/} Standard: Ambient Air Standards, Notification of the National Environment Board, No. 24, B.E. 2547

^{2/} Standard: Ambient Air Standards, Notification of the National Environment Board, No. 21, B.E. 2544

Measured/analyzed/controlled by SPS Consulting Service Co., Ltd.
 Recorded by Mr. Thapakorn Lapprasopand
 Examined/controlled by Miss Miss Sukhon Khaokrib (๓-011-๓-3520)
 Analyzed by Miss Kanyasarat Sangklom (๓-001-๓-4578)
 Telephone 0-2715-8700

Air emission from the Furnace I and II

Parameter	Result			Standard
	March 5, 2011	Aug. 20, 2011	Nov. 1, 2011	
Particulates (mg/m ³)	126	144	52.9	Less than 240 ^{1/}
Sulfur dioxide (SO ₂)(ppm)	718	631	669	Less than 800 ^{1/}
Oxide of nitrogen (NO _x)(ppm)	122	81.8	59.0	Less than 200 ^{1/}
Carbon monoxide (CO)(ppm)	1.97	1.60	6.39	Less than 690 ^{2/}

^{1/} Pollutant emission standards for existing steel factory, Notification of the Ministry of Science, Technology and Environment B.E. 2544
(Calculated at 7% excess oxygen or 50% excess air)

^{2/} Standard of quantity of substances mixed in air emission from a plant Notification of the Ministry of Industry B.E. 2549
(For manufacturing process with fuel combustion)

Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd.
Recorded by Mr. Wichan Choonharat (๓-004-๙-1269)
Examined/controlled by Miss Yupaporn Chanpleng (๓-204-๙-4700)
Analyzed by Miss Kanokporn Anake (๓-004-๙-2158)
Telephone 0-2715-8700

Air emission from the Furnace III

Parameter	Result		Standard
	Aug. 23, 2011	Sep. 9, 2011	
Particulates (mg/m ³)	18.9	62.7	Less than 120 ^{1/}
Sulfur dioxide (SO ₂)(ppm)	704	252	Less than 800 ^{1/}
Oxide of nitrogen (NO _x)(ppm)	138	144	Less than 180 ^{1/}
Carbon monoxide (CO)(ppm)	1.42	7.06	Less than 690 ^{2/}

^{1/} Pollutant emission standards for new steel factory, Notification of the Ministry of Science, Technology and Environment B.E. 2544
(Calculated at 7% excess oxygen or 50% excess air)

^{2/} Standard of quantity of substances mixed in air emission from a plant Notification of the Ministry of Industry B.E. 2549
(For manufacturing process with fuel combustion)

Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd.
Recorded by Mr. Wichan Choonharat (๓-004-๙-1269)
Examined/controlled by Miss Yupaporn Chanpleng (๓-204-๙-4700)
Analyzed by Miss Kanokporn Anake (๓-004-๙-2158)
Telephone 0-2715-8700

Air emission from the Scrubber PPPL (Push-Pull Pickling Line)

Parameter	Result		Standard
	May 16, 2011	Aug. 21, 2011	
Hydrogen chloride (HCl)(mg/m ³)	0.05	0.18	Less than 200 ^{1/}

^{1/} Pollutant emission standards for industry, Notification of the Ministry of Industry B.E. 2549

(For manufacturing process without fuel combustion, calculated at actual oxygen concentration in emission when measured)

Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd.
Recorded by Mr. Wichan Choonharat (๓-004-๙-1269)
Examined/controlled by Miss Yupaporn Chanpleng (๓-204-๙-4700)
Analyzed by Miss Kanokporn Anake (๓-004-๙-2158)
Telephone 0-2715-8700

Air emission quality from Boiler in 2011

Parameter	Result		Standard
	June 20, 2011	Aug. 21, 2011	
Particulates (mg/m ³)	0.22	8.06	Less than 120 ^{1/}
Sulfur dioxide (SO ₂)(ppm)	<2.0	<2.0	Less than 800 ^{1/}
Oxide of Nitrogen (NO _x)(ppm)	57.6	71.8	Less than 180 ^{1/}
Carbon monoxide (CO)(ppm)	<1.00	1.32	Less than 690 ^{2/}

^{1/} Pollutant emission standards for new steel factory, Notification of the Ministry of Science, Technology and Environment B.E. 2544

(Calculated at 7% excess oxygen or 50% excess air)

^{2/} Standard of quantity of substances mixed in air emission from a plant Notification of the Ministry of Industry B.E. 2549

(For manufacturing process with fuel combustion)

Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd.
Recorded by Mr. Wichan Choonharat (๓-004-๙-1269)
Examined/controlled by Miss Yupaporn Chanpleng (๓-204-๙-4700)
Analyzed by Miss Kanokporn Anake (๓-004-๙-2158)
Telephone 0-2715-8700

Air emission quality from Dust Collector

Parameter	Result		Standard
	Aug. 22, 2011	Sep. 14, 2011	
Particulates (mg/m ³)	2.62	0.63	Less than 120 ^{1/}

^{1/} Pollutant emission standards for new steel factory, Notification of the Ministry of Science, Technology and Environment B.E. 2544

(Calculated at 7% excess oxygen or 50% excess air)

^{2/} Standard of quantity of substances mixed in air emission from a plant Notification of the Ministry of Industry B.E. 2549

(For manufacturing process with fuel combustion)

Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd.
Recorded by Mr. Wichan Choonharat (๓-004-๙-1269)
Examined/controlled by Miss Yupaporn Chanpleng (๓-204-๙-4700)
Analyzed by Miss Kanokporn Anake (๓-004-๙-2158)
Telephone 0-2715-8700

Development and Participation in Social and Community Responsibility

In 2011, Sahaviriya Steel Industries Public Company Limited (“SSI”) has initiated new projects concentrating on sustainable development guideline that emphasizes promotions and development for vulnerable people in the society and community activities from all parties. Those parties composed of the Company’s staff, community residents and any organizations involved participated in 48 projects. Those projects focused on different activities, including education development, SSI Arsa or SSI staff voluntary activities, environment protection and preservation, vocational promotion, health and sanitation promotion, religious and cultural support and promotion. Such activities indicated the Company’s strong commitment of being a good member of the society with an aim to create strength for Bangsaphan communities and society to live happily while gaining trust from their residents and stakeholders.

With the confidence in instilling “strength” as its basic foundation for individuals, organizations, families and the societies are important, the Company continuously protected benefit for all stakeholders and creates balance and sustainability in the involved context. Moreover, the Company continued to focus on strength creation for vulnerable people. This was not only due to its awareness of social responsibility but also due to its drive to move forward and create new projects for the youth and vulnerable people, as well as, various community activities related to the Company’s business.

Fortunately, in 2010 under the cooperation of industrial sectors, several activities have been developed and extended by the staff and Bangsaphan communities. The expansion of “voluntary culture” has concretely become evident and appeared tangible and more solid as follows:



The expansion of “voluntary culture” has concretely become evident and appeared tangible and more solid.

1. Social Capital Development

1.1 Strengthening and Innovating the Steel Industry

1.1.1 Thailand Steel House Contest 2012

The “Thailand Steel House Contest” to win Her Royal Highness Princess Maha Chakri Sirindhorn’s trophy and more than 1 million baht money award was aimed to promote creations of steel innovation. This was a good opportunity for architects, engineers and those in steel materials science circle to exchange their knowledge and learning experiences for their application of steel house building and new knowledge development.

“Thailand Steel House Contest 2011” under the theme “Greenovation: Less is More” was held in October 2011 and May 2012 (the event was postponed to 2012 due to the flood disaster in Thailand).

Besides, in cooperation with Siam Architects Association and Iron and Steel Institute of Thailand, the Company arranged an exhibition, displaying the works from Thailand Steel House Contest 2010 under the theme “Steel House: the houses of Future” at the Architect Expo 2011. A large number of visitors joined the event where they could see innovative works, made of steel that could be further developed in daily living.

1.1.2 Metallurgist Awards and the 5th Thailand Metallurgy Conference

SSI has consecutively supported Thailand’s Conference on Metallurgy. This was the 5th Thailand’s Conference on Metallurgy. Moreover, SSI also sponsored two Excellence Metallurgist awards. Held by Department of Materials and Production Technology Engineering, King Mongkut’s University of Technology North Bangkok, this annual event was postponed to January 19 - 20, 2012 at Miracle Grand Hotel Bangkok due to the flood disaster last year.

innovate • strength



1.2 Creation of life strength

1.2.1 *Bangkok Triathlon 2011 to commemorate HM the King's 84th Birthday Anniversary*

SSI cooperated with the Rajpracha Samasai Foundation under the royal patronage held "the 3rd Bangkok Triathlon 2011" to win HM the King's trophy on July 10, 2011 to commemorate HM the King's Birthday Anniversary and raised fund of 608,500 baht for the foundation in order to help people affected by leprosy and AIDS. This activity was in accordance with the concept of its corporate-social responsibility to help and strengthen vulnerable people.

1.2.2 *The Bangsaphan Triathlon Thailand Championship & International Championship 2011*

This activity was held to commemorate Their Majesty the King and the Queen and aimed at promoting Bangsaphan tourism where the Company is located. The event was held on August 7, 2011 at Ban Krud beach, Thongchai subdistrict, Bangsaphan district with 159 Thai and foreigners participants as well as 2,151 visitors including community residents, government officials, tourists and the Company's staff.

1.2.3 *Thailand Iron Man Mini Marathon 2011*

Four steel companies namely, Sahaviriya Steel Industries Public Company Limited, Thai Cold Rolled Steel Sheet Public Company Limited, Siam United Steel (1995) Company Limited and BlueScope Steel (Thailand) Company Limited together held a charity walk-run activity "the 4th Thailand Iron Man Mini Marathon 2011" to support vulnerable people. The 2.5 million baht donations from the event were donated to 23 foundations to help vulnerable people. Regarding the flood disaster last year, the mini-marathon was postponed from November 5, 2011 to February 11, 2012 at Lumpini Park. More than 1,000 participants joined the event. This annual event was held consecutively and raised up to 10 million baht donations to support charitable foundations.

1.2.4 *The Bangsaphan Youth Triathlon Dream Project (1st generation)*

The Company selected Bangsaphan youths to participate in sport trainings and practices to be Bangsaphan's representatives to join Bangsaphan Iron Man Triathlon and other sport events. Sponsored by Sahaviriya Group in 2011,



5 youths passed the selection to join this activity and later participated in major sport events with better records.

1.3 Creation of strength for vulnerable people and disaster victims

1.3.1 *The Silp San Fun Pan Nam Jai SSI Chuan Nong Rak Nam (SSI invites the youths to preserve and protect water) Project*

This is a continuous project, arranged by SSI and the government organizations, including Marine Department and Bangkok Metropolitan Tourism Office. There is a new activity for this year's event which is poem composition technique learning while the main activities are drawing contest and water resource preservation activities to win scholarships. More than 100 youths from 5 foundations participated in the 3rd Silp San Fun Pan Nam Jai SSI Chuan Nong Rak Nam (SSI invites the youths to preserve and protect water) Project in 2011. The selected pieces were later sent to join the 42nd International Children Art Exhibition at Tokyo, Japan.

1.3.2 *"Swim-Bike-Run for Disadvantage" (Triathlon charity event for vulnerable people)*

"Swim-Bike-Run for Disadvantages" (Triathlon charity event for vulnerable people) is an additional activity of Bangsaphan Triathlon Thailand Championship & International Championship 2011 to raise funds from SSI staff and the public on August 1 - 7, 2011. The event received 59,879 baht fund without deduction of expenses from 129 donors and gave it to the youth group from Ban Krud Municipal music club under the music against drug project and other organizations for vulnerable people around the country.

This project is aim at providing opportunity for staff and general public to participate in the activity by giving monetary

support to Sahaviriya triathlon team. The Company launched wristbands “Strength to Live” as souvenirs for those who donated 100 - 300 baht while those who donated at least 300 baht would receive a shirt as a souvenir. All donations without deduction of expenses went to charity activities for vulnerable people. Donors could also specify their preference to support one out of 4 categories of receivers: social victims, the disabled and the handicapped, poor people in remote areas and victims from natural disaster.

1.3.3 Disaster victims support

- SSI helped the southern flood victims.

The Company donated 600,000 baht to support the southern flood victims and 24,630 baht from Sahaviriya Group staff to support victims from the earthquake and tsunami in Japan through Krobkrua Khao 3 TV program. Mr. Sorayuth Suthasajinda, news anchors of Rueng Lao Chao Nee TV program as the representative received the donation at Maleenondh Building.

- SSI-TCRSS helped disaster victims in Japan.

Sahaviriya Steel Industries Public Company Limited cooperated with Thai Cold Rolled Steel Sheet Public Company Limited or TCRSS to donated 2 million baht for the victims from the earthquake and tsunami in Japan through their trade partner JFE Steel.

- Supported flood victims in 20 central provinces.

Regarding the flood disaster in the central and the Northern provinces late 2011, the Company provided support and restoration directly itself and through government and private sectors involved as follows:

- Developed 175 innovative steel boats including 170 multipurpose steel boats and 5 patrol steel boats for the police.

- A number of 170 multipurpose steel boats are specially designed and created by SSI to serve as vehicles with flexibility to transport passengers or necessities for the flood victims. Besides, they could be adapted and connected to be larger boats or rafts. When their mission accomplished, they could be transformed into bookshelves or cabinets.

To help victims, SSI offered 170 steel boats to various organizations, including Flood Relief Operation Center (FROC), The Office of National Research Council of Thailand (NRCT) and Modernine TV.

- A number of 5 innovative steel patrol boats (version 3) steel boats were the 3rd generation innovation survey steel boats designed and created by SSI specially to suit their mission by installing 18 Hp engines. The boats could move forward and backward and with spotlights and horns. Besides, all the boats and their guidebooks for use and maintenance were presented to the National Police Office to be conveniently and safely used in its rescue operations for flood victims in all situations.

◦ Monetary Support for flood victims

- 500,000 baht support through Chairman of Thai Listed Companies Association for the “Capital market unites to help flood victims fund”.



- 150,000 baht support through Foreign Trades Department, Commerce Ministry for the Office of the Prime Minister.

- 150,000 baht support through the Office of Industrial Economy, Ministry of Industry.

- 200,000 baht support through Prachuap Khiri Khan province.

- Provided disaster relief packages for flood victims

SSI group including the management, volunteer staff and special mission rescue team traveled to provide flood disaster relief packages and cooked meals to flood victims in the unreachable areas for support in Wang Noi district of Phra Nakhon Si Ayutthaya, Mueang district of Pathum Thani and Bang Bua Thong district of Nonthaburi.

- Voluntary spirit staff formed special mission rescue team.

A number of 35 volunteer staffs altogether formed a special mission rescue team divided into two groups that took turn for their speedy mobile operation. Each group consisted of 7 members travelling with a big truck and a SSI innovative steel boat and worked around the clock to help SSI staff and their families as well as SSI customers and the public who suffered from heavy flood around Bangkok and its vicinities. Their mission included evacuating people from the affected areas and transporting food and necessary items to affected people quickly, in risk or surveillance areas.

According to the operations, 46 families of SSI staff were rescued and evacuated along with their properties from inundated areas in Bangkok, Nonthaburi and Pathum Thani. The team also transported 2,500 sand bags and 11,800 liters drinking water to SSI staff as well as 60 innovative steel boats from Bangsaphan to help staff and the customers.

SSI special mission rescue team was a role model of voluntary spirit culture among the Company's staff. The team operated under SSI's center for safety and emergency. The majority of the team members were staff from SSI's Bangsaphan plant who devoted themselves to travel and work regardless of tiredness to help their Sahaviriya Group's fellows. During their operations, they also helped a lot of people along the way and were praised by those flood affected staff and the public.

1.4 SSI Arsa Culture Creation

SSI Arsa project is a voluntary project that the Company's staff and management teams join hands with locals to deliver social responsibility activities in Bangsaphan district to bring pride to all participants.

1.4.1 SSI Arsa Bangkok: Do D in a Day, the second year

The Company held voluntary activities that staff could take part in by sharing their happiness and cultivate knowledge to vulnerable people. This time SSI staff from Bangkok office and Bangsaphan plant along with staff from affiliated companies altogether donated new and used books as well as recycle paper for vulnerable children. 545 books and 150 kilograms of paper that would be later recycled for new books were donated. This year program gained a great support from SSI Arsa staff. All donated items were presented to Krachok Ngao Foundation to further send to schools in remote areas and vulnerable people for their opportunity to gain knowledge from those books.

1.4.2 SSI Arsa for Bangsaphan community development

In 2011 the Company staff held 4 SSI Arsa's major activities and initiated 16 minor-activities to encourage staffs to participate in developing Bangsaphan community as follows:



- **SSI Arsa's major activities**

Included 12th SSI Arsa: building a multipurpose stadium at Moo 5, Ban Huay Sai Khao, Kamnerd Noppakhun subdistrict, 13th SSI Arsa: digging a catfish pond and building a mushroom farmhouse at Ban Don Sa-nga School, Kamnerd Noppakhun subdistrict, 14th SSI Arsa: building a school fence, net-surrounding a football field and a volleyball ground and building a nursery house for rubber trees at Ban Wang Namkhiew School, Ron Thong subdistrict, Bangsaphan district and 15th SSI Arsa: building a child development center to commemorate HM the King's 84th Birthday Anniversary (SSI Nong Rawaeng Ruamjai) at Nong Rawaeng School, Thongchai subdistrict.



- **SSI Arsa's minor activities**

Under "A hundred goodness, A thousand hearts of SSI Arsa project" consisted of 1st good deed: building water storage tank for Nurusiman mosque at Ban Ton Thong-lang, Moo 9, Pongprasas subdistrict, 2nd good deed: building takraw court at Ban Klang Na, Moo 6, Mae Rumphueng subdistrict, 3rd good deed: installing a net partition for a football field at Wat Tham Khao Noi School, Moo 9, Kamnerd Noppakhun subdistrict, 4th good deed: repairing and painting playground items at Ban Hinturn School, Moo 5, Saeng Aroon subdistrict, Thap Sakae district, 5th good deed: supporting demolition of the old chapel and relocation of a Buddha statue at Wat Nong Rawaeng, Moo 5, Thongchai subdistrict, 6th good deed: painting a wall of Buddhist chapel and repairing crematorium boat at Wat Hinkong as well as painting school building at Ban Hinkong, Moo 2, Pongprasas subdistrict, 7th good deed: repairing crematorium at Wat Thung Maphrao, Moo 7, Pongprasas subdistrict, 8th good deed: building a security station at Bangsaphan School, Moo 8, Mae Rumphueng subdistrict, 9th good deed: installing the post and volleyball court's tools at Wat Khao Tham Ma Rong community, Moo 4, Pongprasas subdistrict, 10th good deed: repairing crematorium boat at Wat Hinkong, Moo 2, Pongprasas subdistrict, 11th good deed: painting school building of Ban Hinkong School, Moo 2, Pongprasas subdistrict, 12th good deed: renovating a field and purchasing sport instrument for Wang Namkhiew School, Moo 9, Ron Thong subdistrict and 13th good deed: renovating landscape at Wat Tham Khiriwong, Moo 1, Thongchai subdistrict, 14th good deed: renovating a parsonage and crematory for Wat Suwannaram (Wat Thung Khwang), Moo 4, Ron Thong subdistrict, 15th good deed: setting lights in sport field at Ban Ma Rong community, Moo 4, Pongprasas subdistrict and 16th good deed: repairing the roadside pavilion Wat Thung Ma Phrao, Moo 7, Pongprasas subdistrict.

Overall there were 1,782 staffs who participated in SSI's minor activities, using 14,256 work hours with 565 community residents participated in these activities.

1.5 Other social responsibility activities

- **Supported the Books for Thailand Foundation**

SSI handed over 100,000 baht donation to the Books for Thailand Foundation to support the foundation on

education promotion, as well as, educational development and knowledge strengthening for Thai youth, therefore, they will have education opportunity, the same as young people have in the world.

- ***Provided computers for education promotion***

SSI provided 10 used computers to Ban Nong Klang School, Chonsomboon subdistrict, Nong Muang district, Lop Buri province where students have been suffering from the flood disaster and fire. Moreover, the school lacked of computers for its education quality development.

2. Community Development

SSI has carried on a variety of community development activities that involved all sectors, including its staff, community residents and involved organizations. Those 48 activities included education development projects, SSI Arsa voluntary staff, environment protection and preservation, vocational development, health and sanitation promotion, cultural and religious promotion and support. Such action indicated that SSI had strong commitment of being a good member of the community and society with an aim to create strength to the community and society for happy living. Therefore, it gained trust from residents and stakeholders in Bangsaphan.

2.1 Participation in enhancing quality of community education

The Company focuses on enhancing quality of education in Bangsaphan district and nearby areas. The improvement includes three dimensions (teachers and other personnel related in learning and teaching, students and educational places) to provide Bangsaphan youths an educational opportunity similar to youths in big cities.

2.1.1 Sahaviriya Fund for Bangsaphan Educational Development

The Company cooperated with Office of the Basic Education Commission and Office of Prachuap Khiri Khan Educational Service Area 1 in "Sahaviriya fund for Bangsaphan Educational Development 2012" Project by offering funds to management executives from 20 schools in Bangsaphan district to enhance educational quality. Through

this project, the executives of schools were required to submit their 3-year plan for the development project, especially on academic achievement, to receive funding worth 2.6 million baht per year to operate in accordance with the plan. This project is a new aspect in development and enhancement of Bangsaphan educational quality.

According to the operation of the pilot project, 17 schools in 4 subdistricts around the plant, including Mae Rumphueng, Pongprasas, Kamnerd Noppakhun and Thongchai, submitted their plans. The judging committee consisted of representatives from the Ministry of Education's Office of the Basic Education Commission, Office of Prachuap Khiri Khan Educational Service Area 1 and local administrative organizations. However, no large-and small-size schools passed the criteria. Only two middle-size schools, Ban Suan Luang School and Ban Don Sa-nga School, were selected and received the fund of 800,000 baht each for implementation of their plans that would be monitored and evaluated later.

2.1.2 Scholarships for students in the community

SSI and Sahaviriya Group have been consecutively offered annual scholarships to students in Bangsaphan schools, both elementary and secondary levels. In 2011, the students from 22 schools received 202 scholarships and 7 students received continuous scholarships until their graduation. The overall values of the scholarships were 500,500 baht.



2.1.3 Developed educational standard of Bangsaphan Iron & Steel Technology Institute

SSI has helped develop courses for Bangsaphan Iron & Steel Technology Institute since 2008. The Company staff devoted their time as instructors for 2,164 work hours per course and as trainers equal to 2,000 work hours per course. They also transferred knowledge to college teachers for further teaching. One million baht budget and 100,000 baht scholarships were also provided annually for this activity.

According to the office of accreditation and quality evaluation, Bangsaphan Vocational College, the result from its evaluation on this college in 2008 failed the criteria standard. However, this college passed the standard with the highest scores ever, from fair to nearly excellent levels (89.7 percent), after the Company has helped develop the course in 2011. At present, total 290 students from three courses of this program finished their high-level vocational diploma and 70 of them have worked with Sahaviriya Group.

2.1.4 The annual drawing contest project

The Company held the 2011 drawing contest under the 8th Silp Sangsan Jinatanakarn Kwang Klai (Creative Art Limitless Creativity) project for children to win scholarships which was more than 100,000 baht worth. Sangkom Thongmee, director of Sirindhorn Art Center and Paiboon Thamruangrit or Kru Berm, a well known artist in the art circle, was an honour judge on November 7, 2011 at the multipurpose building, Bangsaphan Witthaya school, Bangsaphan district, Prachuap Khiri Khan. More than 200 participants in the contest were from kindergartens to secondary schools. After the contest, a part of drawings were later sent to compete in an international art competition in Japan and some of them won awards consecutively each year.

2.1.5 The Young Agriculturist Project

This pilot project of growing plants by substituting soil with substrate culture was organized in 7 schools in Bangsaphan district. Those soil-substituting materials included organic substances such as coconut fiber, rice husk ash, saw dust and other mixed materials as well as inorganic substances. The aim was to help schools and community to have a learning center where student could learn about organic agriculture and soil-free growing. Meanwhile, it also

encouraged teachers and students to learn, understand and gain both new skills and experience in organic agriculture. Later, those organic products could be used for school lunch. Moreover, the rest of the products could be sold to bring more incomes to school for further sustainable production. In 2011 the project was sustained in order to improve the existing growing plots while the new soil-free experiment plots at Bangsaphan Kindergarten were prepared and applied with bio liquid fertilizer rather than costly nutrient solution substances. The experiment was aimed to be a guideline for cost reduction and its records were contributed to be used as a guideline for future projects.

2.1.6 To be engineer project

SSI held a project to create youth engineers by providing secondary school students in Bangsaphan district knowledge about steel industry and related information and promoting them to further their study in engineering. From 2005 to 2009 the project had been held 5 times, creating 4,410 youth engineers. In 2010, 848 Mathayom 3 students participated in this project.

2.1.7 Teacher development to improve skills in sciences teaching project

SSI and Prachuap Khiri Khan Educational Service Area 1 held a 3-day training program on "Teacher Development to improve Sciences Teaching Skills" at Western Hotel, Mae Rumphueng subdistrict, Bangsaphan district, Prachuap Khiri



Khan on October 28 - 30, 2011. The content included information from elementary school level to Mathayom 3 level and centered on accuracy of the information, transferring techniques to students, therefore, they could understand the information, teaching techniques and enjoy learning. More than 140 teachers participated in this program.

2.1.8 Super Smart & Intelligent Kids project (SSI Kids)

SSI held a learning activity about environment and ecosystem around the plant through simple scientific experiments by using scientific models and teaching materials. The target groups were Mathayom 5 students from schools in Mae Rumphueng subdistrict.

Moreover, the Company also promoted school development in the community including providing learning and teaching materials, supporting school activities which were beneficial to students and communities and others.

2.2 Occupational development to strengthen household economy

For the past 20 years the Company has operated in Bangsaphan district where agriculture is the main occupation. The major crops are pineapple, rubber trees and coconut. Until today, it has already proved that agriculture and industrial societies could live harmoniously and develop together with mutually support. Therefore, people from the two societies will be healthy and live peacefully. In addition, people in the community will have jobs and sufficient incomes while maintaining their culture and a way of Thai life style. The Company also held the project to promote agricultural development to increase incomes for farmers and housewives as follows:

2.2.1 Sahaviriya Ruam Pattana Project

Held by Sahaviriya Group, "Sahaviriya Ruam Pattana Project" set up a number of community banks in 4 subdistricts around the plant. Primarily in 2011, the first set of the banks included Tha Kham, Chamuang, Suan Chat and Ma Rong community banks. Currently, the project had 497 members and total capital of 2,094,236 baht that was divided into community capital of 1,549,236 baht or 76 percent and the rest of 500,000 baht added by Sahaviriya or 24 percent. Later, SSI has set up 7 community banks, including



Tha Manao, Klangna, Pordaeng, Talad, Lakmueang, Chaimongkol and Ban Tangsairong community banks, with 1,000 members and 2,745,299 baht capital.

2.2.2 Increase of local hiring from the community

Previously, 40 - 50 percent of new staffs were recruited from the community. Meanwhile, SSI's policy on promotion of job employment in the community, aiming at supporting Bangsaphan people and nearby communities to seek employment in their hometown, so that, they can take care of their families. Considering such policy, the Company adjusted its employment policy by increasing ratio of staff recruitment from the community residents to 77 percent in 2011. Information about job employment by SSI and Sahaviriya Group has been informed to the meeting of community leaders monthly, including the result of job hiring in the previous month, jobs available the current month and the following month. Therefore, the Company achieved beyond its goal for the ration of new recruitment from the community increased up to 80 percent.

2.2.3 Bangsaphan Organic Fertiliser Bank

Under this project, two groups of farmers would be selected annually to participate in the activity at Bangsaphan. Each group consisted of 50 members and produced 100 tons of organic fertilizer by using a 120,000 baht budget supported by the Company. Later after their sales of the fertilizer, the farmers must save a part of the profit and spend the rest of income on rotating cost for their next production. This was considered a good start to promote community farmers to develop their capability while learning and practicing altogether. This was aimed to help improve the



community economy to be stronger and self-sustainable, based upon sustainable development concept initiated by His Majesty the King.

This project was originally a cooperatives project to promote organic fertilizer production that had been in operation for years. Since the project started its operation 2008 - 2009, 6 sustainable organic fertilizer banks were set up in 4 subdistricts and with 283 members. In 2011 the project was developed according to sustainable development.

2.2.4 The "Organic Agriculture with Natural Method" Radio program

Because of an aim to help Bangsaphan farmers to have database on how to do organic agriculture, the Company produced a radio program as a link to create a learning network among groups of farmers. The program consisted of six parts, presenting useful information for farmers to learn and apply to their work. It also increased a chance for farmers to access to agricultural information through another channel and for the Company to exchange opinions, publicize its information and create good relationships with the groups of farmer in the community.

2.2.5 SSI promotes local product sales

SSI promoted community products in Bangsaphan, therefore, local people will gain extra incomes by purchasing their goods and products through a mobile community goods project. Under this project, low-price and quality OTOP

products from various vocational groups of community housewives from different subdistricts were free to sell in the compound of the plant. This helped community products of Bangsaphan gain wide recognition and increase incomes for locals.

2.2.6 Purchase of products and services from the community

SSI has a clear policy to support community goods and continuously followed such policy. In 2009, the Company totally spent 63.5 million baht on purchasing products and services from the community. The Company and Sahaviriya Group mobilized to increase its purchasing volumes from the community, including the products made in the community, the products needed to promote for a standard production and the product distributed by the community and services from community providers. That led the company's purchasing target of community products to rise to 142 million baht or 123.7 percent in 2010. Later in 2011, the Company aimed to spend on community products at 145 million baht and resulted in its spending of 176 million baht.

2.3 Protection and development of environment quality

SSI realized the importance of responsibility to environment and natural resources. Thus, the Company oversaw the production process to ensure that substance released from the production would not affect the quality of life and vocational health of its staff and community people.



Besides, the Company cooperated with involved organizations to continuously hold campaigns and activities to promote good environmental quality.

2.3.1 *Bangsaphan Car Free Day 2011*

SSI in cooperation with Sahaviriya Group, Bangsaphan district and local administrative organizations led Bangsaphan residents and its staff to participate in Bangsaphan Car Free Day 2011 in order to commemorate HM the King's 84th Birthday Anniversary, the activity was held on September 18, 2011, with its goal to reduce global warming.

"Bangsaphan Car Free Day 2011" was aimed to cultivate an idea of healthy lifestyle and reducing global warming among Bangsaphan residents. There were 320 bicycle riders, aged 5 - 80 years old joining enthusiastically at 5 locations (Kamnerd Noppakhun subdistrict municipal office, Kamnerd Noppakhun subdistrict administration office, Pongprasas subdistrict municipal office, Mae Rumphueng subdistrict municipal office, and Sahaviriya Steel Industries Public Company Limited. All riders later gathered in front of Bangsaphan district office and biked around Bangsaphan market to support the campaign of energy use reduction. They also invited the public to cooperate with the campaign by no driving for 30 minutes during 8:00 - 8:30 a.m. According to the calculation, the activity at the event could reduce carbon dioxide emission 3.95 tons.

Besides, Sahaviriya Group continuously supported other activities such as encouraging staff to travel by bicycle,



the Company's bus or car pool rather than driving their own cars and supporting activities of the bicycle club to help reduce automobile pollution and promote good health. Sahaviriya Group will continue those activities to make the staff and Bangsaphan residents aware of environment protection and will put all effort to turn Bangsaphan into a healthy environment town.

2.3.2 *SSI Beach Clean Up Project*

This annual activity was continuously held by SSI staff and Sahaviriya Group to collect trashes and clean a range of Mae Ramphueng Beach. More than 500 local business operators, SSI staff and community residents participated in the activity.

2.3.3 *SSI Garbage Bank Project*

SSI cooperated with 5 local schools that were ready and voluntary for this project. Those schools included Ban Nai Lok, Ban Nong Yaplong, Ban Sanam Luang, Bangsaphan



Kindergarten and Ban Klong Loi schools. This project was aimed to enable local youths to understand garbage so they could manage, separate and eradicate garbage properly and recycle some garbage. This activity was an extension of the project “Kru Technology Sa-Ard (Clean Technology Teachers)” project, which focused on teachers and school management team to learn and understand an application of local technology to efficiently manage garbage and waste from various sources. The project was a pilot project to extend a concept to the project “Recycle Garbage Bank” that the Company planned to promote in schools and Bangsaphan community.

2.3.4 Transportation control to reduce effects on community

The Company focuses on controlling vehicle transportation to reduce the effects on community by reviewing its plan on controlling Sahaviriya Group transportation operations while conducting the plan for 2011.

It also installed two close-circuit cameras in residential areas: in front of Wat Huay Sai Khao and in front of Suan Chat Real Estate and have a continuous monitor and weekly report. Meanwhile, all trucks under Sahaviriya Group had stickers with alphabets and numbers attached according to their companies. Other activities were quarterly training the Company’s drivers to follow rules and regulation of traffic in the plant zone and in Bangsaphan residential zones as well as providing safety information on public relations boards.

Moreover, Sahaviriya Group’s trucks and the outsourcers would be intensively inspected by traffic police in the plant zone and Bangsaphan residential zones daily. The Company set up a regulation sign for traffic in residential zones on route of the plant and Phetchkasem Road. It also assigned the company’s operation committee on transportation control to attend a monthly meeting with community leaders in order to publicize and monitor Sahaviriya Group’s transportation system, standards and measures of punishment and control in case of violation of regulations, for example.

2.3.5 “Kuen Phuen Pa Hai Por (Re-forestation for Our Beloved Father) Project” in commemoration of HM the King’s 84th Birthday Anniversary

SSI cooperated with Ban Sai Petch community in reforestation activity called “Kuen Phuen Pa Hai Por (Re-forestation for Our Beloved Father) project on August 20, 2011 at a deteriorating forest plot of 20-rai in Sai Petch community, Thongmongkol subdistrict.

2.4 Promotion and protection of the society, culture and religion

The society of Bangsaphan community has its own identity. People in the community live in harmony with generosity to one another based upon their beautiful culture and tradition. Thus, as a good member of Bangsaphan community, the Company supported various community groups who were suffering while protecting the religion and exquisite Thai culture as follows:

2.4.1 Religious and culture support

The Company supported construction and renovation of chapels for the community temples. The Company also took part in major religious and traditional activities in the

community and supported various activities that promoted religious and Thai tradition values.

2.4.2 Activities on Elders' Day

SSI joined hands with Bangsaphan Hospital and Health Service Network to provide a group of 100 senior people of Bangsaphan community healthcare knowledge to help look after the community residents. It also arranged a seminar and training in order to promote good health among the elders.

2.4.3 SSI Happiness Caravan Project

The "SSI Happiness Caravan" project was a healthcare mobile service project for people in all subdistricts in Bangsaphan district. It offered various kinds of services, including dental care service, diesel lubricant replacement, electric apparatus repair, haircut service and movie presentation. The project has been held consecutively 11 times since 2009 and with 1,499 people coming for service. In 2011, this project was conducted twice for 290 service users.

3. Participation in Social Responsibility Activities

3.1 SET Awards: CSR Awards 2011

SSI as a company listed in the Stock Exchange of Thailand (SET) applied for candidacy in the selection for SET Awards: CSR Awards 2011 by submitting information related to the project committee and received their approval to pass into the next round to present the company's performance. The Company was delighted to receive a SET Award in the category of Excellence in Corporate Social Responsibility (CSR Awards) for the company group with asset value in the market with more than 10 billion baht worth. Moreover, the Company was nominated for the top winner as the most excellent company and received the awards at the SET Awards 2011 presentation ceremony on December 22, 2011.

3.2 Join the CSR Network of the Stock Exchange of Thailand

The Company
was delighted to
receive a SET Award 2011
in the category of
Excellence in Corporate
Social Responsibility
(CSR Awards).



4. Communication on Community and Social Responsibility Activities

4.1 Communication on Social Responsibility activities through mainstream media

4.1.1 External communication

- From January to November 2011, the Company distributed 101 pieces of news on social responsibility activities and they were publicized 415 times. Total cost of public relations space was 21,674,680 baht.

4.1.2 Internal communication

- Various channel: Communicated through various media including intranet, internal television programs, public relations boards, electronic mails and conferences/meetings.
- Print advertisement: produced advertising media with the theme "Dealing with Global Warming" series and community development activities and were released on special occasions of each newspaper.
- Electronics communication: via websites, 360 degree blog.

The Result of Public Relations in 2011

Type	Stories	Release Times	PR Value
Business and Success	168	738	36,518,956
Social and Community Responsibility Activities	101	415	21,674,680
Total	269	1,153	58,193,636

- Communication through television programs on special occasion.

- Advertorial: Communicate through advertorial sections in two local newspapers, Seang Prachuap and Hua Hin Sarn, with 24 stories on a half-page size. The advertorial pages were later presented to stakeholders and the government organizations.

4.2 Special media

4.2.1 Iron Man News journal:

This tabloid newspaper was aimed to develop a new communication tool that is efficient, and accessible. Released with 42 issues in prints and electronics news, it could promote better and accurate understanding for the company's stakeholders.

4.2.2 Annual report

4.2.3 Corporate social responsibility report

4.2.4 Advertorials about social responsibility activities:

The information about those activities was published in three news magazines including Matichon Weekly, Nation Weekly and Siamrat Weekly in order to encourage and bring awareness amid target groups, so, they can access to

information about the activities continuously and create awareness in a wider range and among all target groups.

4.2.5 Special occasion book:

Regarding the "Thailand Steel House Contest 2010" project, the Company published 1,000 copies of a book titled "Innovative Living Steel" for later distribution. The book gathered information of all participants in the contest. It will serve as a media to transfer knowledge that may promote steel industry and creativity in future living.

4.2.6 Three community cable television programs:

Those programs were launched to publicize the Company's community and social responsibility activities, provide knowledge about steel industry to community residents as well as engage them in inspecting the plant. Those cable TV programs including SSI Pa Sa, SSI Variety and SSI News were broadcasted at 7 p.m. via Channel 26.

4.2.7 Two local radio programs:

Nhueng Nathee Kab SSI Sai Jai Pawa Lok Ron (One minute with SSI on Global Warming Concern) was broadcasted every news hour while Kaset Insee Withee Thammachart (Organic agriculture in natural way) on Thursdays at 7.30 - 8.00 p.m. through 90.5 and 89.5 MHz Radio Stations.

Human Resource and Rights

Happiness of SSI Way

The principle and concepts, which SSI and its staffs have held and brought into practices continuously, became the identity of the Company, reflecting the status and value of the Company that offered to all groups of stakeholders. These were combined into a way that mobilized SSI to exist, develop and expand sustainably. In 2011, the Company combined its business philosophy, business ethics, vision and mission, value and staff's ethics altogether into "SSI Way". The SSI Way will serve as the Company's model that can be distributed and transferred all compositions to all staff continuously. It remains a critical and constant guideline for the Company, regardless of challenges and obstacles, business development and expansion as well as personnel change.

Staffs are one of the driving forces behind the success of an organization while the Company is seen as the second home for staff. Thus, the main mission of Human Resource and Administration Division together with the management and managers of all units have created work atmosphere and environment at SSI to be a home of happiness where all members are involved in this creation. In 2011, SSI Home promoted its business ethics, value and philosophy under SSI Way through various business activities. What appeared from those activities throughout the year was "smiles" and "trust".

The "smiles" and "trust" did not only appear among the company staff but they also extended to their families and communities through 16 activities last year, including Yiam Ban San Sampan (Staff house visit) project, the additional job for staff family project and Roi Kwamdee Pan Duangjai SSI Arsa project to develop their own community. All the activities reflected that "happiness" could occur not only by being a taker but also by being a giver and that suited the real meaning of "Happiness of SSI Way".



Number of SSI Arsa

Staff	Number (person)
Executive level	29
Managerial level	115
Supervisory level	431
Operational level	429
Total	1,004

Note: Recorded on December 31, 2011

Realized Staff's Happiness

In 2011, the Company held and arranged activities to generate Happiness of SSI Way as follows:

Body Happiness Activities/welfares

- Provide health assurance (In 2011, SSI increased benefit for staffs to get treatment with no request to pay in cash at the clinics that joined this program.)
- Provide accident assurance.
- Hold a "Staff Health Week" campaign to educate staff on self-health care concerning the results of their annual physical examinations and health and health promotion
- Hold "White Factory" activity to educate staff on danger of narcotics
- Hold 6-type sport activities year-round
- Hold an annual sport day
- Provide educational training for staffs on drugs and AIDs by guest instructors.
- Hold clubs' activities
- Hold New Year celebration event
- Hold morning exercises

Heart Happiness Activities/welfares

- Support a funeral fund association for staff
- Make merits on New Year's Day
- Make merits and pouring water to executives on Songkran Day
- Hold a wax molding traditional ceremony on Buddhist Lent Day
- Make merits on staffs' monthly birthday
- Create a learning corner in the plant compound
- Set up "Steel" Library
- Hold "Show and Share" activity
- Hold "Innovation" activity
- Provide training and knowledge development to staff
- Set up "Knowledge" library

Family Happiness Activities/welfares

- Hold activities on Family Day
- Hold occupational promotion activities (occupational training) for staffs' families (3 jobs)
- Hold activities on Children Day for staff's children
- Hold Family Camp event with the theme "Steel Man Steel Mind"
- Hold activities on Mother Day
- Hold "Yiam Ban San Sampan" (Home Visit for better relations) activity and visited 120 families
- Provide free and fixed-priced meals for plant workers
- Provide providence fund
- Increase company's vehicles for staffs (expanded the routes from 4 routes to 6 routes).
- Provide financial support for staff who work at Bangsaphan Plant
- Provide housing financial support for staff whose residence are not at Bangsaphan district
- Provide financial support for staff on duty outside workplace and oversea staff
- Provide shift-working payment
- Provide staff uniforms
- Set up a cooperative

Society Happiness Activities/welfares

- Hold voluntary activities between staff and communities
- Hold "Friends Help Friends" activity to help needy staffs
- Donate blood to the provincial Thai Red Cross and Bangsaphan Hospital
- Donate blood to the Red Cross Society at Chulalongkorn General Hospital every 3 months
- Hold "Face to Face" activity together with various departments to listen to problems and suggestions from staffs
- Hold "Night Workplace Visit" activity to visit staff on duty at night shift and listened to their work problems
- Hold "Line Visit" activity to visit staff during their morning-shift duty and daytime staff to inform urgent messages that need them to understand as well as to listen to their work problems
- Hold 6 "Values" activities
- Hold "SSI Way" activities

Intra-Organization Communication

Communications are important factor to create understanding and establish good relations between staff and the Company. SSI focused on creating two-way communication through various communication channels as follows:

Communication channel	Objective	Outcome in 2011
Messages from Group CEO and President Video clips of an interview with Group CEO and President (broadcasted through Intranet and TV)	To inform and make all staffs aware of the policy, the operation direction and major performances of the Company directly from Group CEO and President.	
Arrange a stage for work performance and operation plan presentation	To allow staffs in the managerial level to share their opinions on the direction and business operation, both for company and for different departments, so, they can communicate information further to all their teams in department and section levels clearly and accurately.	
Voice on line	To provide information to staffs directly from managements in different lines of work to generate understanding about business vision or related operation system.	
Morning talk	To allow all managers and staffs have two-way communication.	At least once a week
SSI Loves All magazine	To distribute news and information about SSI and staffs' activities. To encourage role models of SSI staffs as they have worked in line with SSI Way.	7 magazines
Face-to-Face, Line Visit	To visit staffs at their actual operation location to provide information and news about activities of the company as well as open for their opinions and suggestions.	All work units, every quarter
Night Workplace Visit	Visit staffs during their night time operation.	10 times
Visit staffs' house	To take care of staffs and their families by visiting their house.	120 houses
Shop Steward Committee	Representatives of staffs to communicate with their colleagues.	12 meetings
E-news	To inform staffs about SSI's operation and future and provide useful information for their health.	12 times
Internal TV	To publicize important fast and accurate information.	43 times
Family Camp (Steel Man Steel Mind)	To support good relationship among staffs' families and choose the lucky one who always joined the Company's activities.	1 time (24 families)
Activities supported SSI Way	To publicize and exchange information about business philosophy, ethic, vision, mission and staffs' ethic and business conflict.	8 times

Employee Development

The Company supports the development of skill and knowledge for staffs in all levels with various methods and activities.

Method	Activity	Outcome in 2010
On-the-Job Development	Set standards of necessary knowledge and skills to different tasks and assign supervisors to coach and train staffs to enable them to perform in accordance with required knowledge and skill levels and monitor the outcomes regularly.	164 persons
In-house Classroom Training	Provide different courses, including Core Competency course, Managerial Competency course, Functional Competency course, Management Case Study course and other special courses.	170 courses, 5,672 participants Average training period at 24.58 hours/person/year
Domestic and Overseas Training	Sent staffs for training held by external organizations both domestic and overseas.	232 courses 512 participants Average training period at 4.48 hours/person/year
SSI & WCE Innovation Awards 2010	Create and develop quality of work and innovations and serve as a stage for participants to exchange ideas, techniques, methods and experience in engineering for innovative creativity.	June 7, 2011 183 staff participants 47 pieces of work presented

Employee Engagement Survey

The Company has conducted Employee Engagement Survey consecutively since 2008 and found a gradual rising in tendency of employee engagement. In 2011, the score of employee engagement was in medium level at 56 percent. According to Human Resource and Administration Division, the score was measured based on affecting factors, including sex, department, authorization level, age, period of work experience and many other factors. The result would be used to develop and improve the next year operation plans.

In addition, the survey will show the devotion level and factors that strengthen relationship staff and the Company.

Innovation, Research, Development and Distribution

In 2011, the Company continuously aimed to increase ability to promote the Company's vision to become an innovative organization through the Innovation Process Working Committee, Researches & Development in production and new products to meet customers' needs. These led the Company to sell and distribute innovative premium value products to the customers up to 169,634 tons or 11 percent of total sales.

The Innovation Process Working Committee

In 2011, after Innovation Platform was created by the Innovation Process Working Committee, it attracted staffs to submit their ideas and suggestions about their own innovation and the innovations co-created by their groups, especially staff from the plant. There were 450 ideas submitted and 445 of them were approved for registration by the committee while 57 ideas were under experiment, 22 cases received the committee's approval to be further materialized. Most ideas centered on development of production process, quality and cost reduction in production process. Those reflected the efforts from the staff on this issue throughout the past year.

Nonetheless, these ideas are needed to be developed to be innovative products and services and applied to strategies. Moreover, staffs who did not have a chance to join the process, should be encouraged by arranging trainings and improving Innovation Platform to be more efficient. The effort to consistently create innovation will help the Company to become "the manufacturer of innovations" and a critical drive for the Company to achieve its vision.

In June 2011, the committee held a contest for excellent innovations that would have to gain an approval through Innovation Platform to the final process of materialization. There were 56 participants, joining the contest and 11 participants who passed through the



final round. The winner for the product or innovation category was the circuit to examine the abnormality of the signal of power supply PLC while the innovation that won the production process category was "Furnace Smart Charge Logic." The contest was aimed to mobilize the Company's vision in operating to achieve its goal of creating "Innovate premium value steel products and services for customers, generate consistent profit and sustainable value for stakeholders".



1. Goal Program and Appraisal System 2.0

In 2011 the Company continued proceeding its Goal Program 2.0 and Appraisal System 2.0 to create long-term competitiveness. The Company was well aware that human resource is valuable and critical for business operation. Without strong and excellent quality staffs, it is impossible for the Company to remain strong in the industry.

Aiming to emphasize on cultivating strength while overcoming weakness in individuals to more continuously and tangibly mobilize their creative ideas and innovation for the strength of the Company, the Company had the innovation topic included in the management meeting monthly. Therefore, all departments could present creative ideas and update the progress of any pilot projects under their responsibility to the management team continuously throughout the past year.

2. Focused on Research-Developed Thai Steel Industry to Global Standards

The Company intentionally focused on research and established research unit for its mission and the organization to transform to an innovative organization. The Company's research and development department was approved by Finance Ministry's Revenue Department to become the 120th research and development body to continuously conduct research studies. This unit has campaigned for everyone to understand the importance of research and increasingly submitted research studies for approval from the National Science and Technology Development Agency (NSTDA) each year. From 2006 to 2011, the Company already submitted 77 projects worth totally more than 59.6 million baht for approval. A number of those projects could be proceeded to obtain their copy rights. Besides, SSI became the first and the only Company in steel production industry that submitted many research studies to NSTDA each year. That showed the Company's effort and realization of the importance of research to develop sustainable knowledge. In January 14, 2011, the Company and Synchrotron Light Research Institute signed an agreement on their academic cooperation in metal and materials to conduct 3 co-research projects.

**NSTDA has
approved 77 research
projects from SSI,
which were
59.6 million baht
worth.**

SSI Research and Development Projects

Approved research projects (2006 - 2011)		
• Product Quality	37 projects	worth 30,684,090 baht
• Process Improvement	40 projects	worth 28,938,880 baht
• Total	77 projects	worth 59,622,970 baht

Co-research projects with Synchrotron Light Institute			
No.	Item	Project	Objective
1.	Steel ship surface analysis	1. An investigation of thin oxide layer of pickled and oiled low carbon steel strip surface	1. To study the surface topography, appearance and compositional contrast of thin oxide layer.
			2. To study the phase determination of localized thin oxide layer strip surface.
2.	Deep drawing mild steel microstructure	2. An investigation of thin oxide layer of as hot-rolled steel strip surface for thin gauge	1. To study the structure, thickness composition and oxidation state of thin oxide layer on strip surface.
		1. Study of in-situ austenite grain and grain boundary of low carbon steel strip	1. To study in-situ austenite decomposition and austenite grain boundary migration of free-boron and boron-added steel.
		2. Study of in-situ austenite grain boundary segregation of Al and B in low carbon steel	1. To study in-situ austenite grain boundary segregation of Al and B in low carbon steel.
3.	High strength low alloy microstructure	3. Study of grain boundary orientation of low carbon steel strip	1. To study the crystallographic orientations of ferrite iron grains.
		1. A structural analysis of Ti and Nb elements of high strength low alloy steel	1. To study the characteristic of Ti and Nb existed in Fe-BCC matrix (EXAFS spectra).
			2. To qualify traction of precipitates (TiN, TiC, Nb(C,N)).
			3. To study In-situ precipitation (Ti and Nb) kinetics.

3. Dissemination of Innovations for the Country Development

SSI aimed to promote and upgrade research knowledge in order to create new knowledge and disseminate knowledge gained from research. Thus, the Company joined the academic conferences and seminars domestically and abroad. The Company also provided support for Metallurgist Award continuously at Thailand's Conference on Metallurgy (TMETC), including the 5th Metallurgist Award recently. The Company's research studies, that were important and beneficial to metallurgy circle, were selected to present at the conference:

The 5th Thailand's Conference on Metallurgy

This conference, hosted by King Mongkut's University of technology North Bangkok, was held in Thailand on January 19 - 20, 2012. Three research studies from SSI were selected to present at the conference, including:

1. A study of "Influence of Titanium and Niobium, rolling temperature and cooling rate on microstructure and mechanical properties of High Strength Low Alloyed Steel" was aimed to determine the influence of Titanium and Niobium alloying element on mechanical properties.
2. A study of "Effect of Boron Addition on Tensile strength and Compression strength of Boron-added Low Carbon Steel at High Temperature" was aimed to study mechanical properties of low carbon steel with low Boron addition at high temperature.
3. A study of "Influence of Carbon content on the Character of Oxide Scale Layer and Bonding between oxide scale and steel substrate" was aimed to study oxide scale characteristic of the different carbon content of hot-rolled steels and determination of bonding between oxide scale and steel substrate.

The International Conference on Metal and Materials 2011 (METAL 2011)

The Company's research study titled "Microstructure observation and mechanical properties of hot rolled low carbon steel strip with boron addition" was selected and presented at the International Conference on Metal and Materials 2011 (METAL 2011). This in-depth research focused on studying the effect of Boron substance on atomic structure and mechanical properties of hot-rolled steel sheets so it could answer high-level demand and add product values for the customers especially automobile and electrical appliance manufacturers. Besides, it would create important knowledge for sustainable extension or development that steel industry for automobile and electrical appliance production could apply for practical use.

METAL 2011 was considered a grand international academic conference to distribute findings from researches and development studies on metal engineering technology. Many metallurgists from Europe and around the world would participate and present their work in this conference. Its 20th anniversary event was held by Tanger Ltd. in cooperation with VSB-Technical University of Ostrava, CSNML and ASM Czech Chapter on May 18 - 20, 2011 in Czech Republic. The event was co-sponsored by a number of academic institutes and research institutes from several European countries. It was aimed to act as a stage to display innovation progress in material production and development technology as well as to promote knowledge, understanding and exchange knowledge about material technology among experts in materials from leading universities and companies worldwide.

The International Conference on Technology of Plasticity (ICTP 2011)

SSI was accepted by the organizer of the International Conference on Technology of Plasticity (ICTP 2011) to present a research study on “Effect of Boron Addition on High Temperature Deformation of Boron-added Low Carbon Steel” at the event held on September 25 - 30, 2011 at Aachen, Germany. This research studied the effect of Boron addition on deformations properties at high temperature of Boron-added steel that could be well applied to hot-rolled steel sheets production. It would be a proof of acceptance and confidence in SSI's research and development.

Held every three years period, ICTP 2011 was a world-class stage for metal forming research presentation with more than 700 researchers participating in this event. Besides, it was named “Olympic of Metal Forming”, showing that this great conference was well recognized and presenting a study at this event obviously helped confirm and emphasize SSI's vision of “Innovate premium value steel products.” This conference also reflected that development of steel research has been continuous held to give researchers an opportunity to suggest and exchange their knowledge in research, technology development and metal forming knowledge altogether.

4. Innovative Products Accredited by World-class Accredited Organizations

Innovative products

1. Officially developed the production of New Unique Product 0.8 x 1219 and ready for production for sales.
2. Developed Product Checked Plate with 2.8 and 2.0 mm. thickness to have special smoothness to satisfy customers.
3. Produced and sold premium valued hot-rolled steel sheets, especially high strength low alloy group, quality grades (SM490 YA, SM490YB and SM540) to KOMUTSU.
4. Produced and sold premium valued hot-rolled steel sheets for compressor producers, quality grade (SAPH 440).

The development of Premium Value Innovative Products enabled the Company to sell and distribute such products to the customers for 169,634 tons or 11 percent of total sales.



Sahaviriya Steel Industries Public Company Limited (SSI) continued operating with efforts and full support from the management team and all staff in order to achieve our vision to “innovate premium value steel products and services for customers, generate consistent profit and sustainable value for stakeholders”. Thus, SSI continuously received several honorary awards from different organizations as follows:

Good Governance

SSI realized the importance of good governance and organizational ethics in management. Therefore, SSI has set a clear guideline for the operation that the Company always held and followed. The honorable awards list is as follows:

- Board of the Year for Distinctive Practices 2004/5 and 2006/7 Award from the Thai Institute of Directors.
- SET Awards for two consecutive years from Stocks Exchange of Thailand (SET):
 - Best Corporate Governance Report Award 2005
 - Distinction in Maintaining Excellent Corporate Award 2006.

Management

With an intention for continuous development to enhance efficiency in all operations, SSI has become the first company in Thailand who received the Prime Minister Awards, held by Ministry of Industry.

- Prime Minister Award for Excellent Industry 2003 and other excellent industry awards in various categories continuously.
- Prime Minister Award for Excellent Industry from the Ministry of Industry:
 - 2011 Energy Management
 - 2010 Logistics Category
 - 2009 Increase in Productivity
 - 2008 Environment Quality Preservation
 - 2007 Quality Management
 - 2006 Energy Management
 - 2005 Increase in Productivity
 - 2003 Safety Management

- 2002 Quality Management
- 2001 Environmental Quality Preservation
- 2000 Increase in Productivity
- Excellent Logistics Management, metalwork operating venue, from the Ministry of Industry in 2010.
- Honorary Award for a successful organization under the project of promotion for energy consumption reduction, transportation category in 2010.

Improvement of Quality of Life

With an aim to develop steel industry along with improving quality of life of staff, society, community and being environment-friendly, SSI has developed the organization to become a business operator who gives the best recognition and concern about stakeholders. That led the Company to receive many awards:

Safety, Occupational Health and Environment

- SET Awards: CSR Awards 2011
- Honorary “Sema Kunoopakarn” pin and certification 2010 for Contributor to the Ministry of Education
- Certification for Pioneer Organization in the project on carbon footprint in the organizations from Thailand Greenhouse Gas Management Organization (public organization)
- Honorary shield for energy preservation from Energy Policy and Planning Office, the Ministry of Energy
- Thailand Kaizen Award 2011 (Certificate level), organized by Technology Promotion Association (Thailand-Japan)
- CSR-DIW Continuous Awards 2011
- Thailand Energy Awards 2009 for excellent management executives in energy conservation
- Thailand Energy Awards 2008 for excellent controlled plant in energy conservation
- Excellent Company Awards for safety, occupational health and environment in national operation level during 2001 - 2007 (7 consecutive years).

- Excellent Green Plant Award 2003
- EIA Awards 2001 (Excellent business operator that managed and preserved environment following the measures set in a report on analysis of environmental effect 2001)
- Excellent controlled plant that conserved energy 2000

Labour Relations and Welfare Benefits

- GOOD PRACTICE award for Safety Invention 2011 from the Department of Labour Protection and Welfare, Ministry of Labour
- Honorary Award for excellent workplace for labour relations and worker welfares 2011 (5 consecutive years)
- Excellent workplace for worker welfares award 2003 - 2007 (5 consecutive years)
- Excellent workplace for worker relations award 2003 - 2007 (5 consecutive years)
- Excellent contributor on recreation award 2010

Besides, SSI received certificates and industrial standard that were critical for its operation as follows:

Industrial Standards

- Certificate for Green Industry Level 3 (Green System) 2011 from the Ministry of Industry
- Certificate for quality products under European industrial standard (CE Mark) for hot steel sheet product (EN 10025-2)
- Certificate for quality products under Japanese Industrial standard (JIS Mark) for hot steel sheets product:
 - JIS G3101
 - JIS G3106
 - JIS G 3131
- Certificate for Industrial product standard No. 1999-2543 (TIS 1999)
- Certificate for Industrial product standard No. 2011-2543 (TIS 2011)

- Certificate for Industrial product standard No. 2060-2543 (TIS 2060)
- Certificate for Industrial product standard No. 1479-2541 (TIS 1479)
- Certificate for Industrial product standard No. 1735-2542 (TIS 1735)
- Certificate for Industrial product standard No. 1499-2541 (TIS 1499)
- Certificate for Industrial product standard No. 1501-2541 (TIS 1501)
- Certificate for Industrial product standard No. 1884-2542 (TIS 1884)
- Certificate for Industrial product standard No. 528-2540 (TIS528)

Other Certificates

- Certificate for standard quality management system ISO/TS 16949: 2002
- Certificate for Laboratory capability TIS 17025-2000
- Certificate for standard of occupational health and safety management system TIS 18001
- Certificate for standard environment management system ISO 14001
- Certificate for standard quality management system ISO 9001:2000



Business Ethics of the Company

SSI always operates with accountability, integrity and competitiveness together with fair treatment and responsibility to each of the stakeholders of all groups.

1. Shareholders

Realising that stakeholders are true owners of the Company, SSI has responsibility to create additional values for shareholders in the long term. The Company has set a guideline for the committee, the management and the staff as follows:

1. Take full responsibility with utmost capability, honesty, carefulness, consideration and fairness for the benefits of all stakeholders.
2. Present the Company's report on performance, finance and other related issues in its correct, complete and updated form.
3. Inform all shareholders equally about the future of the Company, both positively and negatively.
4. Never seek to profit for oneself or others - by using information from the Company that has not yet been announced to the public, or do anything that may cause conflict of interest with the Company.

2. Customers

Appreciating the importance of customers which affects the success of the business, the Company has always intended to seek any method to respond to customers' need for better efficiency and effectiveness and win their trust as follows:

1. Deliver quality products and services that respond to customers' needs or beyond
2. Communicate politely with customers and provide them with sufficient, updated and correct information about products and services without any exaggeration which may lead to misunderstanding on quality, quantity or related conditions of such products and services.

3. Attentively perform in accordance with the conditions agreed with customers. In case of inability to follow any condition, customers must be immediately informed in order to seek a participatory solution.

4. Arrange a system or channel of communication so that customers can express their concern about quality, quantity and safety of products and services and ensure the Company's prompt response.

5. Maintain customers' trust and never abuse such privilege.

6. Provide suggestions about further usage of Company's products and services.

3. Business Partners

Realising the importance of fair treatment with business partners in regard to revenue, the Company always provides accurate facts and figures, hold joint business discussions for solutions and any circumstances that may cause conflict of interest by following the guideline as follows:

1. Not to demand, take or gain any profit from customers.
2. In case of any information about wrong-doing demanding, taking or gaining any profit relating to business partners, the incident must be revealed and the problem solved by working together in due course.

3. Strictly adhere to the conditions according to the agreements. In case of inability to follow any condition, business partners must be informed promptly and in advance in order to find a solution together.

4. Business Competitors

Realising the importance of fair treatment with business competitors, the Company follows the guidelines as follows:

1. Never illegally or improperly search for information relating to business competitors.
2. Never destroy the reputation of business competitors by wrong accusation/defamation.

5. Staff

Appreciating that staff are vital to the overall success, the Company treats staff fairly in terms of payments, opportunities and potential development based on human rights without discrimination against any individuals due to similarity or difference of race, religion, sex, age or physical conditions by following the guideline as follows:

1. Treat staff with respect to their individuality and human dignity
2. Provide fair payments to all members of the staff
3. Always maintain Health & Safety measures as a high priority to ensure the well-being of staff in the working environment
4. Appoint, transfer, reward and discipline with sincerity, based upon knowledge, ability and appropriateness of each individual
5. Pay attention to the improvement of knowledge and ability of all staff
6. Avoid any actions that may unfairly affect the job security of staff or psychologically threaten or pressure their mentality.

6. Regulators

Understanding the importance of actions based upon law and business ethics, the Company follows the law, rules, regulations and official standards restrictively as well as fully cooperates with official regulators.

7. Society and Community

Realising the importance of corporate social and community responsibility on effects to natural resources and the environment, the Company provides support, promotes various constructive activities for the good of the society and the community, protects and restores natural resources and supports the community's efforts for sustainable development.



For further information, please contact:
Public and Community Relations Office,
Public Affairs and Social Responsibility Division
Tel. 0-2238-3063-82, 0-2630-0280-6
Fax 0-2236-8890, 0-2236-8892



The Youth Conservation Camp: SSI collaborates with Bangsaphan Science Teacher Network to instill local youths in Bangsaphan with conservative mind to preserve the environment, learn to live in harmony with the environment and create local environment conservation network.



Sahaviriya Steel Industries Public Company Limited

Head Office:

28/1 Prapawit Building, 2nd - 3rd Floor,
Surasak Road, Silom, Bangrak,
Bangkok 10500

Tel.: 0-2238-3063-82,
0-2630-0280-6

Fax: 0-2236-8890,
0-2236-8892

Factory:

9 Moo 7, Ban Klang Na - Yai Ploy Road,
Mae Rumphueng, Bangsaphan,
Prachuap Khiri Khan 77140

Tel.: 0-3269-1403-5,
0-3269-1412-5,
0-3269-1419-20

Fax: 0-3269-1416,
0-3269-1421

www.ssi-steel.com