

# PROJECTION OF THE FUTURE

2010 Corporate Social Responsibility Report  
Sahaviriya Steel Industries Public Company Limited

2010



innovate • strength



## The Scope of Report

The 2010 report of Sahaviriya Steel Industries Public Company Limited or SSI, on social responsibility is the second issue, following the first issue in 2009. It provides information not only about the Company's performance on social activities, environmental management and success in human resource development throughout the previous year, but this issue also includes further details about business overview and the Company's performance on climate change management and several awards that signified our performance in various areas. It illustrates more social issues that the Company has participated since our operation commenced.

This report also continues presenting the vision, mission and various operations of the Company that promoted social responsibility concept. The concept has become a part of our business plan and was applied to set a management system, which is measurable, to lead the whole organization in the same direction. Other contents include management on safety, environment and occupational health as well as results from development and corporate social responsibility projects based upon sustainability concept that the Company has supported. Performance reports of other companies under the SSI group are also included in this issue to increase access to the Company data. This CSR report is available in print and is also distributed via e-media at the Company's website [www.ssi-steel.com](http://www.ssi-steel.com).

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## Our Purpose

Innovate premium value steel products and services for customer; generate consistent profit and sustainable value for stakeholders.

## Values (iFacts)

integrity	Fighting spirit	aim for excellence	can change	team work	service-mind
<b>i</b>	<b>F</b>	<b>a</b>	<b>c</b>	<b>t</b>	<b>s</b>
We do what we say	Never give up	The best is yet to be	Be the leader of change	One for all, all for one	Deliver more than expected



“SSI” not only achieve creating strength from operation, following our motto of “innovate • strength” that we can write a new page of business history, but we also succeed in strengthening our stakeholders, community, society and environment. For SSI, development based upon sustainability is still a long road for us to march. We never stop developing but make it better every day.

A handwritten signature in black ink, consisting of several fluid, connected strokes.

Win Viriyaprapaikij  
President

## Message from the President

Dear Stakeholders,

In 2010 Sahaviriya Steel Industries Public Company Limited did not only achieve creating strength due to our operation following the “innovate • strength” concept; that enabled us to rewrite a new page of history in the business in terms of sales volume, productivity, revenue and net profit.

But we also succeeded in strengthening stakeholders in the society, starting from the grassroots, and participating in the development of our country and the industry.

Despite turbulence of steel industry in 2010 and the effects from financial crisis in the United States of America, SSI could well survive the crisis and erased total losses within the first quarter due to the strong effort of our management and staff and the Company’s good governance. Meanwhile, our responsibilities to our stakeholders, community and society became stronger.

- **Management to reduce impacts of climate change.** In 2010 the Company reduced energy usage in the production equivalent to the reduction of CO<sub>2</sub> emission at 33,534.82 tons. Since the management project began in 2007 until the end of 2010, total CO<sub>2</sub> emission reduction from the production reached 63,901 tons. Moreover, the Company is one of 13 pioneer organizations and the first Thai-owned steel industry that signed a memorandum of understanding on “Carbon Footprint for Organization” in Thailand in cooperation with Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) and Thailand’s National Metal and Materials Technology Center (MTEC).



- **Safety, occupational health and environment.** The Company deeply regretted and shared a deep sorrow about a car accident last May that caused fatal loss of our staff. Although it was confirmed an accident, according to the police investigation, the Company realized and always kept restrictive safety every second. Nevertheless, over the past year, total intensity of sulfur dioxide gas, nitrogen oxide and dust particles emitted from the 1<sup>st</sup> and 2<sup>nd</sup> furnaces was 309 parts per million (ppm), 47.2 ppm and 86.2 milligrams per cubic meters respectively (measured on 26 November 2010). Those figures were lower than requirement by legal standard, at 800 ppm, 200 ppm and 240 milligrams per cubic meters respectively. That was compatible with the result from a community survey on community concern over the operation of the plant. The top three problems that concerned the community from the 2010 survey were dirt and dust, traffic and quality of rain water. Concerns over those problems rose to 9.9, 7.1 and 5.1 respectively, up from 6.8, 3.7 and 2.0 in 2009.

- **Development and participation in society and community.** Besides empowering activities for the underprivileged, the Company initiated the first Bangsaphan Iron Men International Triathlon in 2010 to promote tourism at Bangsaphan to international level. There were 156 local and foreign participants in the contest. We also conducted 45 CSR programs that benefited 12,536 people. During the past five years, 1,567 Company staff spent 12,536 hours in our “SSI Arsa (SSI voluntary)” program with strong cooperation from community people.

- **Human resource.** The “Happy Workplace” concept was applied to labor union activities along with other modern concepts about human resource management for the “success of the organization” and the “smiles of the staff”. According to a survey on staff’s relationships in 2010, the result was 54 percent, which was considered satisfactory.



- **Innovation, research and development as well as innovation distribution.** The results came from the work of two committees. The first one was the Innovation Process Working Committee. In 2010, they helped reduce expenses of the Company up to 34.6 million baht, excluding innovation that could not be estimated. Amid 287 creations by our staff, the innovation was selected through the innovation platform created by the Company. The other committee was the Innovate Premium Value Product Working Committee who focused on innovation creation of value-added steel products and for customers. By aiming to improve the Company's products beyond other steel producers, the committees and customers co-developed products together, enabling the Company to gain sales revenue worth 1,261 million baht from 56,500 tons innovative products in 2010.

- On 27 August 2010, SSI signed a Memorandum of Understanding ("MOU") with Tata Steel Group to propose asset acquisition (the "Proposed Acquisition") of Teesside Cast Products (TCP), a fully integrated iron-and-steel making facility with the second largest blast furnace in Europe located in northeast England. Then on 24 February 2011, SSI signed a Sale and Purchase Agreement with Tata Steel UK Group for the acquisition of TCP. Moreover, SSI has established a new member of SSI Group – Sahaviriya Steel Industries UK Limited or SSI UK in order to invest in this plant.

Besides the investments that strengthen our Company, and increase alternatives and business opportunities for our future expansion, we expect to share and exchange our learning with the society, such as responsibility to community, society and environment based on participation and sustainability that the Company has always followed. These have happened because our stakeholders have contributed and supported all the changes to make us a better progress in the future.

Development based upon sustainability is still a long road for us to march.

We never stop developing and making it better every day.



Win Viriyaprapakit  
President

# PROJECTION OF THE FUTURE

Today SSI creates strength for the future. We focus on our business mission to mobilize Thai steel industry with responsibility. We intend to carry on our mission of innovation and drive Thai society towards progress. We stand firmly to maintain our commitment of responsibility to community and environment.

The balance of those three main missions is SSI's philosophy for real development.







The future is written following our today's actions. We have strong will and will operate with all effort as committed. We will take care and pay attention to internal environment while restoring and protecting natural resource outside. We will promote good conscience among our staffs while contributing and sharing with community and society. Those will lead us to develop creative energy properly, to live in harmony altogether and to pass on sustainable happiness to the future altogether.





# 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 Industry UK Limited (“SSI UK”), a wholly-owned subsidiary, acquired a fully-integrated iron-steel making facility located at Teeside in the northeast of the 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 - namely 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.”

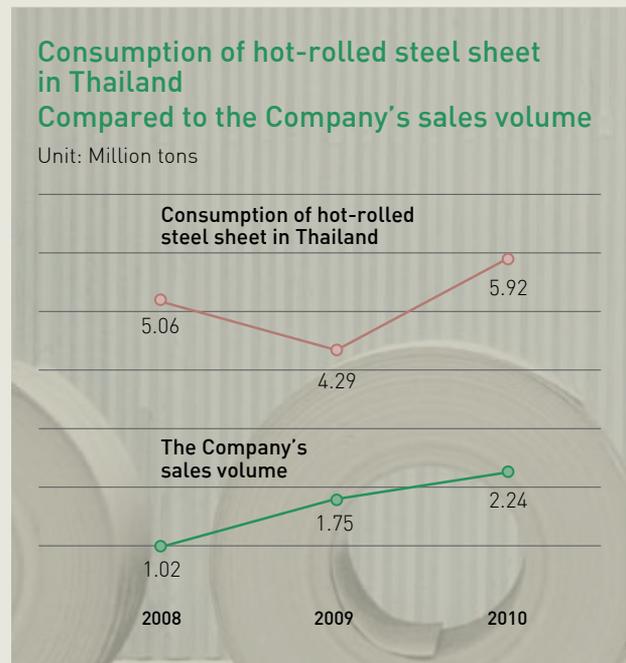
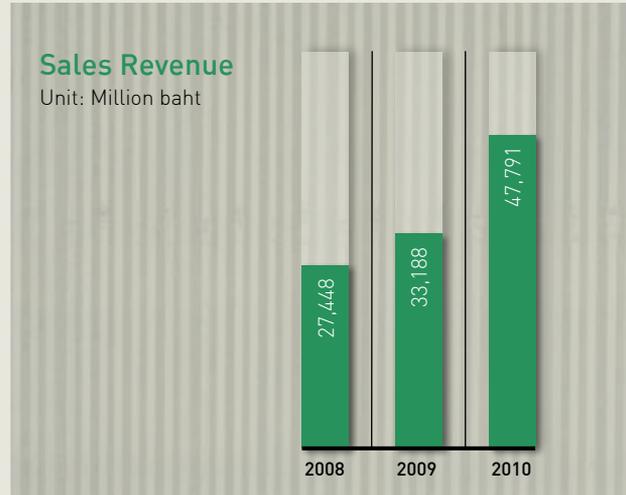
## SSI Group Structure



# Business Overview and Economic Performance

Despite turbulence in steel industry in 2010, Sahaviriya Steel Industries Public Company Limited or SSI could maintain quite a good performance. Last year the Company gained 48,331.5 million baht for total revenue and 47,085.9 million baht of that were derived from hot-rolled steel sheets sales, up 43 percent year-on-year. The net profit was 2,445.8 million baht or 0.19 baht per share.

The Company sold 2.24 million tons of hot-rolled steel sheets annually while having productivity of 2.23 million tons of hot-rolled steel sheets. In 2010, the sale revenue was 47,790.9 million baht while the net profit was 2,445.8 million baht, which ranked the fifth in the profit record of the Company. That profit strengthened the Company's finance and enabled the Company to get rid of accumulated loss since the first quarter. The Company tried to maintain such outcome consistently to create strong yield for shareholders in the following years by using four main strategies. Those strategies included: 1) operating with transparency under good governance; 2) focusing on selling high grade products that yielded high margin of profit. Forty one percent of the revenue came from value-added products for customers (26 percent were high graded products and 15 percent were specific character products); 3) increasing market shares with quality products and better services. The Company gained 8 new customers following its development of 14 new products including new high grade products with 8 different levels of quality and 6 new specific character products, and 4) continuously reducing operative cost that helped cut down 275.1 million baht of the Company's total expenses.



# Overview of the Operation with Social Responsibility

## Management for Reduction in Impacts of Climate Change

Climate change is currently an important global problem due to humans' activities that change the components of global atmosphere directly and indirectly. Besides the volatility of climate, various factors including temperature, humidity, precipitation and season are changed noticeably. It is necessary for all creatures to adapt themselves to those changes in the climate zone where they live. A major cause of greenhouse effect or global warming is the use of fossil fuel that has been a main energy resource used by humans for industrial development during the past years. Global warming is related to rising intensity of greenhouse gas in the atmosphere. It affects the survival of living creatures because rising global temperature leads to season change and such change brings about difficulties for the creatures to adjust themselves in the changed environment.

Regarding an increase of impacts of climate change and greenhouse gas management in industrial sector, several powerful countries including those in the European Union (EU), Japan and the US have used trade barrier measures particularly non-tariff barriers against developing countries. They raised issues of climate change that affected society and environment to hindrance trades for their interest. Since current climate especially global warming became more severe due to the effects from production sector, social sector as well as environment and natural resource sector, Thailand's industrial sector needs to adjust itself.

As the leader in hot-rolled steel sheets production industry in Southeast Asia and a leading operator in Thai steel industry, Sahaviriya Steel Industries Public Company Limited realized the importance of those problems. Thus, the Company has managed to reduce the effects due to climate change through various projects and activities. Following our policy on participation in social and environmental development through a strategy, 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 included as follows:-



## ► Set up the Climate Change Committee

This project was aimed to promote leadership in management to reduce effects of global warming from steel industry. The Company appointed the Climate Change Committee to take responsibilities as follows:-

1. To create leadership of changes to reduce global warming by promoting and coordinating for cooperation in the Company's activities that are related to the prevention and reduction of the effects due to climate change.

2. To organize a meeting to report results of the activities related to climate change management at least once every quarter, such as reduction of energy use, improvement in production process for reduction in carbon dioxide (CO<sub>2</sub>) emission and other environmental management activities.

3. To gather information and produce a report on the results of operations or activities related to any climate change reduction activities for Managing Director to consider for dissemination later.

4. To provide opinions and guidelines or projects related to climate change to the production sector while giving support and cooperation in any campaigns about global warming to the public.

5. To take on the role of a representative of the Company in coordination with the government and other organizations to hold management projects on global warming reduction or climate change.

6. To create and communicate the Company's brand and activities on climate change reduction to create good image of the Company to the public.

7. To hold other activities concerning climate change as assigned by Managing Director.

8. To consider and propose a list of subcommittee for managing director to appoint; the subcommittee is to gather and present information or assist management committee for reduction in climate change effects.

The Company realized that climate change is an environmental problem with global effect. Therefore, the Company appointed a management committee to reduce effects of climate change and to operate activities through various projects and activities. Those included activities on energy saving, waste management as well as public relations therefore, the Company staff and the public will be aware of effects while providing some guidelines to help reduce such effects and cooperating with government organizations on climate change. Besides, the Company applied a concept of product life cycle assessment to environmental activities in order to reduce effects of climate change and improve environmental operations continuously, according to the Company's policy on participation in social and environmental development as well as corporate social responsibility. Thus, the Company could reduce energy use in production equal to a reduction of 63,901 tons of CO<sub>2</sub> emission from 2007 when the project started in the end of 2010. In 2010 the Company could reduce 33,534.82 tons of CO<sub>2</sub> emission.



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### ► The Results of Climate Change Reduction Management

In 2010, the Company targeted and planned to operate, monitor and measure the quantity of green house emission reduction through several projects. Those included reduction of fuel oil, electricity, diesel oil, production waste and waste in production period, for example. 10 activities to promote reduction in greenhouse gas emission included:-

1. Green product is an experiment study to develop new products that focus on energy saving and wastes in production process. (Green product cut down 1,281.39 tons of CO<sub>2</sub> emission).

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 26,983.75 tons of CO<sub>2</sub> emission).

3. Green logistics is a transport-improving activity to increase efficiency and reduce fuel use in the management and transport system of raw materials and products in the plant (Green logistics cut down 3,045.72 tons of CO<sub>2</sub> emission).

4. Green maintenance is a maintenance activity based upon reduction in materials and disposable materials, such

as replacement of long wear plates with short ones to reduce material weight each time, replacement of thick lubricant-prove plastic sets with thinner ones, and reduction in of food-containing foam boxes use (Green maintenance cut down 2,100.57 tons of CO<sub>2</sub> emission).

5. Green building is an activity to reduce electricity use in the office buildings, such as growing plants, scheduling time for air conditioners function (on-off time) and turning off lights during lunch time or when not in use, (Green building cut down 90.69 tons of CO<sub>2</sub> emission).

6. Green IT is an activity using IT technology to reduce energy use, such as video conference between Bangkok office and Bangsaphan office, replacing CRT screens with LCD screens, developing remote access programs to solve distant issues, reducing trips to the plant during holidays or day-off (Green IT cut down 32.70 tons of CO<sub>2</sub> emission).

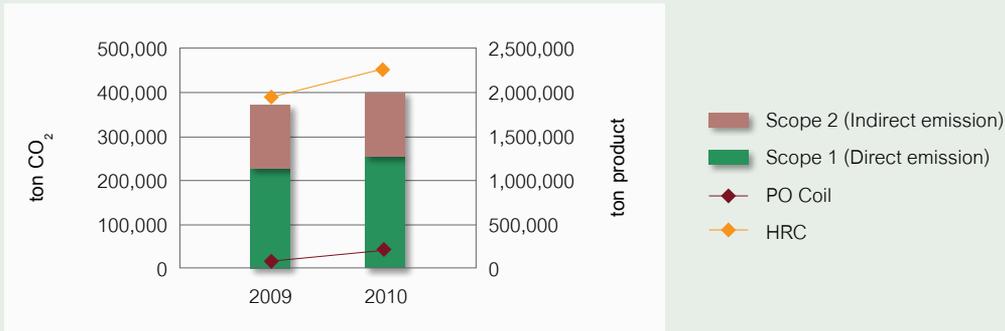
7. Green procurement is a purchasing activity for eco-friendly products or services by considering energy saving or green-label products as priority.

8. Green management is an improving activity to reduce production waste, including garbage separating and waste recycling based on 3R principle.

9. Green network is a formation of network within the organizations through representatives of each organization. It is to encourage and promote self-responsibility among staff on global warming through activities on Green Day on the third Friday every month.

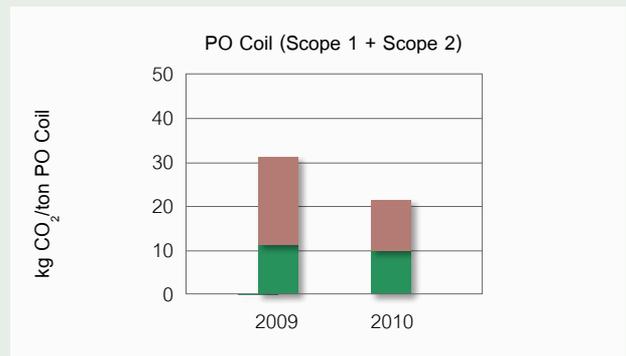
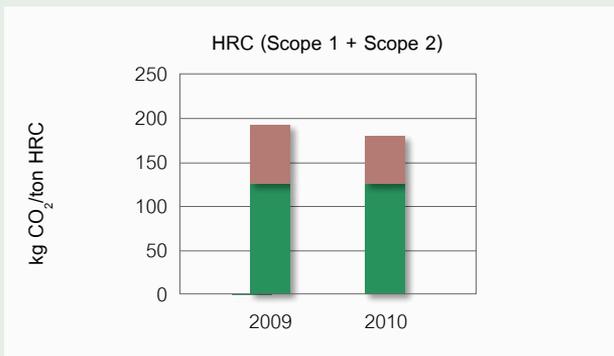
10. Green CSR is the social-concern project, focusing on engaging community to participate in natural and environmental preservation, such as in-organic fertilizer production program, forestation program, beach trash collecting program and garbage bank.

According to those activities above, the Company could reduce CO<sub>2</sub> emission per tons of production at 6.25 percent per ton HRC (or cut down 12 kg of CO<sub>2</sub> per ton HRC) and 27.17 per ton PO Coil (cut down 8.6 kg of CO<sub>2</sub> per ton PO Coil) respectively compared to those in 2009.



**Remark:** Use the Green House Gas inventory for an organization based on ISO 14064-1:2006 and IPCC as a guideline  
 Scope 1: Green house gas from fuel burning in production process and transportation of raw materials and products in SSI (excluding use of vehicles sharing by the Company)  
 Scope 2: Green house gas from energy produced from the outside that SSI bought in, such as electricity.

In 2010 a tendency of green house gas emission rose following higher production volume.



■ HRC (Scope 2 Indirect emission)  
 ■ HRC (Scope 1 Direct emission)

■ PO Coil (Scope 2 Indirect emission)  
 ■ PO Coil (Scope 1 Direct emission)



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### ► Management of ozone depleting substances

According to the Montreal Protocol on Substances that Deplete the Ozone Layer on 7 July 1989 with commitment to reduce and end the use of ozone depleting substances by early 2010, SSI has managed to reduce and stop using ozone depleting substances continuously since 2005. At present SSI no longer uses ozone depleting substances in all operations.

### ► Eco-friendly purchasing

Promoting stakeholders in supply chain to realize and cooperate in environment protection is another important method that SSI always pays attention to especially 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, SSI focused on 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 2010 SSI had 7 groups and 7 items of green products worth 2.46 million baht in the Company's purchasing list.

### ► Protection of community biodiversity

Ecosystems and biodiversity in Bangsaphan district are important for the living of 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 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 realize the importance of natural resource especially on the Company's utilization of land near Bangsaphan coastline where rare sea creatures often appeared. SSI and Sahaviriya Group's Environmental Management and Promotion Center formed a network for surveillance and protect rare species of marine creatures in the area. The network included fisherman communities in Thap Sakae, Bangsaphan and Bangsaphan Noi districts in cooperation with government organizations, local administration organizations, local marine and coastline environmental research institute. The purpose of the network was to look after and protect 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. The activities included continuously educating people on proper methods of surveillance and protect rare species of marine creatures,

sustainable fishery that has no effect on them and laws on different types of fishery boats. The information was provided by experts from Fishery Department and Marine and Coastline Resources Department. At present there are 160 members of the network and over the past year, more than 1,000 participants joined the activity.

**A Study on Biodiversity of Wild Birds.** Birds are vertebrate creatures that are the most varieties in Thailand. They can live and seek for food in all ecosystems. Being flying creatures enable birds to relocate to new habitats quickly and in long distances when ecosystems in their current habitats or feeding ranges are changed, when quantity of food declines or when climate changes. SSI and Sahaviriya Group's plants are located in the area adjacent to Mae Ramphueng wetland where is considered a main habitat and feeding area of many local birds and migrating birds. Thus, the Company and Sahaviriya Group's Environmental Management and Promotion Center organized a survey studying on the variety of birds in the wetland around the Company's compound 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 the birds and population counting systematically. The findings showed that the variety of the birds there 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 Pa Klang Aow and Mae Ramphueng national parks.** This project was aimed to extend a scope of development from the organization to community and the society to sustainably benefit the society in the long term. SSI was aware of the importance of ecosystems around the plant that consists of 1,200-rai Pa Klang Aow National Park prominent with rubber trees and 4,550-rai Mae Ramphueng National Park which is a part of Pa Khlong Mae Ramphueng National Conservation Forest, including 1,500-rai land forest and 3,050-rai mangrove forest. Thus, the Company cooperated with local residents in forming a community network of Bangsaphan district for the environment promotion and development of quality of living and the Sahaviriya Group's Environmental Management and Promotion Center was their advisor. The network agreed to develop those two national parks with support from SSI and Sahaviriya Group to become an eco-tourist destination of Bangsaphan district. The developing activities included growing mangroves, freeing young water animals in the area, building a walkway for nature learning at Pa Klang Aow mangrove forest and renovating a boy scout campsite at Pa Klang Aow to facilitate campers or visitors to learn the diversity of plants and animals at mangrove forests in Pa Khlong Mae Ramphueng along the walkway.



## ► Cooperation with external organizations

With an aim to organize activities to reduce global warming more tangibly and systematically, the Company in cooperation with government organizations and academic created projects and activities on climate change as follows:

- Cooperated with JGSEE, King Mongkut's University of Technology Thonburi, in a study of carbon intensity in concrete, steel and energy industries (fossil power plants).
- Joined Chulalongkorn University's Environmental Engineering Department of Engineering Faculty in a project of preparation for Green house effect management for steel and stainless steel industry in Thailand.
- Cooperated with Industrial Ministry's Industrial Works Department in creation of green house gas inventory for industrial plants in a project of green house gas management in industrial sector, sub-project One.
- Cooperated with Thailand Green House Gas Management Organization (Public Organization) or TGO and Korea Energy Management Corporation (KEMCO) in a project for energy assessment in steel industry by experts from South Korea.
- Joined the 3<sup>rd</sup> Thailand's Eco Design Awards 2010 or Eco Design 2010 under the "Reducing global warming, Creating eco-friendly products and services" theme, organized by National Metal and Materials Technology Center, Thailand (MTEC).
- Cooperated with Thailand Management Association to promote instructors to join a seminar on "Climate Change, Business Opportunity in the Future".

- Cooperated with Thammasat University's Chemical Engineering Department to support research on carbon footprint.

On 18 November 2010 Sahaviriya Steel Industries Public Company Limited signed a memorandum of cooperation with TGO and MTEC in the project to "Carbon Footprint for Organizations for Thailand." The Company became one of 13 pioneer organizations and the first Thai steel producer that made such commitment. This cooperation would keep the Company updated with the volume of green house gas emission released by the Company. The result would be used as a guideline for later activities to reduce green house gas emission later. This project will end in June 2012.

As for the main activity in the future, based upon the Company's GHG report, the Company will enlist further green house gases in the green house gas inventory from the activities operated by external organizations that the Company hired or outsourced. Those activities included energy use for raw material production, transportation of products to customers and transportation of staff. This activity was aimed to evaluate total volume of green house gas emitted directly and indirectly related to the Company's activities based upon ISO 14064-1. Then, the result will be used as a standard for the Company to describe quantity of green house gas emission from the Company and a guideline to plan for green house gas emission reduction or control later.



## Safety and Occupational Health

In 2010 SSI still focused on operating with social and environmental responsibility and continuously applied such concept through supply chain to set goals and plans. Those included safety and occupational health management for company staff, environmental management in both local and regional levels as well as acceptance of suggestions and opinions and cooperation with community in organizing activities. The details were described as follows:-

### ► Safety and Occupational Health Safety and Occupational Health Management

The management of safety, occupational health and environment at work in 2010 based on the management standards system on occupational health and safety: Thai Industrial Standards (TIS) 18001 and OHSAS 18001. The TIS 18001 was first applied at the Company's operation in 2001, followed by OHSAS 18001 in 2007. Both standard systems have been examined, evaluated and renewed for certificates continuously until today. Those major improvements on management of safety and occupational health over the past year included as follows: A campaign on safety rule or SSI-OK is the behavior - based safety project aimed to change behavior and develop conscience about safety in the plant compound amid staff. The Company expected the campaign to create safety custom in the long term and to become a base to promote sustainable safety and occupational health operations through several improving activities and campaigns all year round. This project has been continuously adjusted and carried on in 2011.

Because of safety concerning outside the operation and safety related to communities around the plant, besides a campaign on safe driving all year round especially during holidays, SSI and Sahaviriya Group's Center for Environmental Management and Promotion held an event titled Safety Week of Sahaviriya Group's Plants in the community. The event was held at the community market, in front of Wat Huay Sai Khao, Bangsaphan district. This event was arranged to give the community an opportunity to enjoy various activities including exhibitions, a fair, performances and safety demonstrations. The safety demonstrations such as fire prevention, emergency rescue and other safety measures at the plant were provided with no charge by instructors from the plant and guest experts. Those were aimed to build up confidence in the safety standards of Sahaviriya Group's plants while creating safety conscience safety in the community.



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## Health care and occupational health care for Company staff

Workforces are not only an important resource but they are also key stakeholders of the SSI operation. Thus, health care and occupational health care for company staff is an important mission that SSI never neglects. 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 projects to monitor environmental quality at the operation sites and projects to improve work environment. Those projects included a project to reduce dust and fume in the compound of the plant, a project to improve brightness in operation areas and, a project to improve air ventilation in the hot-rolled steel sheets plant. Besides, information from the survey was used for creating a physical examination program for staff based on the risk in their operations. Therefore, the Company 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 rest breaks. Moreover, several other organizations involved also conducted recreations, health promotion activities all year round. Those included football, futsal, volleyball, sepak-takraw, petong, as well as aerobic dances, healthy youth contests, and health care information communication activities.

## Safety and occupational health care training

Safety and occupational training is very critical to reduce work accidents and occupational illness. SSI is aimed to enable all staff to learn about work danger and proper processes and methods in operation. Those will help prevent from work danger and illness, both acute and chronic, and will reduce loss and accident rates in the organization. More than 80 training courses on occupational health, safety and environment were provided by SSI. 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 2010 all SSI staff averagely spent 10 hours on those training courses throughout the year.

## Preparation for emergency

SSI is aware of the importance of preparation for emergency and work accidents. Thus, the Company appointed a subcommittee on fire prevention and emergency rescues 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 organizations involved in the compound of the plant and a relief plan to reduce the effects from emergency on persons, community, environment and assets. Others were a plan to solve and restore 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 situations for any teams involved.

The subcommittee is also a main player cooperating with the Office of Safety and Environment in conducting fire drills, hazardous chemicals rescue, evacuation, first aids or rescue of the injured as well as responses to LPG leakage, flood and environmental emergency. The exercises include both in-house drills among staffs and inter-organization drills with government organizations, local administration bodies and hospitals, for example. Those are to ensure that in case of emergency, SSI staff and the operating teams involved are ready for such emergency. Total 13 training courses and drills were conducted in 2010.

### Statistic of Work Accidents

It is very regrettable that last year a fatal work accident in May was the first work accident here that cost a life of our SSI staff. Mr. Chanchai Arj-orn a driver of roll steel sheet lifting cart who was on duty on 7 May 2010 was hit to death by another cart while he got off his cart. The police investigation concluded that it was an accident at the coil yard and the driver of the other cart was not careless but in the impossible position to see the victim. However, SSI reviewed the operation protocol for raw materials and products storage areas and increased restriction on safety operations, starting from reviewing risk evaluation, figuring out any tasks possible risky to severe harm. That was to create a plan to reduce and control such risks as well as to prevent repeating of such a sad incident later.

Considering the Lost Time Injury Frequency Rate (LTIFR), LTIFR of SSI in 2010 was unsatisfactory at 3.63. Thus, SSI's Safety Committee and the Office of Safety and Environment revised several issues in the operation plan and targeted to reduce the Company's LTIFR to 1.5 in 2011.

### Safety management of raw materials and products transportation

Out of total 51,298 trips of vehicle transportation in 2010, SSI experienced only one accident, down from 7 accidents out of total 41,497 trips in 2009. The decrease was because SSI had several tasks done continuously during late 2009 and early 2010. Those included setting a working committee to control vehicle transportation of Sahaviriya Group, improving a plan to control drivers' work, improving products transportation standards, reviewing operation training for staff and others involved as well as revising an examination measure in case of any violation of operation protocols.

According to the achievement above, the committee further adjusted the operation plan continuously. They also presented information and results from their operation to discuss and listen to opinions at the meeting of the mobilizing committee for leader council formation. The meeting included leaders from local organizations, environmental leaders, Bangsaphan residents and other people who were interested in the meeting. This meeting is held monthly and in 2011 the Company continued committing to the 11-item



operation protocol that was used as social contract as follows:

1. Keep speed limit not exceed 30 kilometers per hour from the plant to Bangsaphan Hospital and not exceed 50 kilometers per hour from the hospital to Phetkasem Road.

2. Keep speed limit not exceed 30 kilometers per hour while driving around the curves, sections/intersections, school zones, markets, and residential areas.

3. Keep distance between two trucks at no fewer than 50 meters to leave enough space for any small car to speed up and cut in.

4. Turn on low-level front lights all the way from the plant to the section off Phetkasem Road.

5. Do not use of the route between Phetkasem Section and the plant during 07.30 - 08.30 hour and 15.30 - 17.30 hour (except on public holidays).

6. Do not speed up to cut in at the curve especially near sections or blind spots and no reverse driving in the converging or diverging areas.

7. Loaded trucks are strictly forbidden from passing the Ban Krood - Tah Manao, Nong Rawaeng - Tha Lor route (the route at the back of the hospital).

8. Never leave the removed front parts or hind part of trucks parking along the pavement from the plant zone to off-Phetkasem Road section (except broken trucks and if so, a warning tool or sign must be put in a safe distance to alert travelers and the problem of broken trucks must be speedily solved.

9. Never park any truck, neither empty trucks nor loaded trucks, in residential zone and market on the way from the plant zone to Off-Phetkasem Road section.

10. Products must be kept firmly fixed in the truck and well covered with canvas sheets.

11. Vehicles must remain in good condition and drivers must be in the ready-to-work condition.

## ► Environment Environmental management

The SSI has been using environmental management standard ISO 14001 since 1999 and gained accreditation continuously. The SSI's Safety and Environmental Office acts as the major body for environmental management. By working together with other production units at the plant, it appointed the operator and controller for pollution treatment systems via water ways, air ways and waste residue control required by law. Besides, 6 other subcommittees worked on monitoring and solving environmental problems at the plant, including water, air and waste residue issues as well as preservation of energy and natural resource environmental at the plant.

Because of the concern of the areas outside the plant compound, SSI co-operated with other companies under Sahaviriya Group at Bangsaphan to use Sahaviriya Group's Environmental Management and Promotion Center 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 steel slabs as main raw materials from several sources abroad with quality control regarding the standards and customer demand. In 2010 the Company targeted raw material waste in production process at no more than 1.95 percent. The result from the operation showed that the waste was kept slightly lower than our target, 2.06 percent. In 2010 SSI produced 2.23 million tons of hot-rolled steel sheets and 0.13 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 2010 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)	342.69	-
Electricity (KWh/Ton)	98.68	24.56

- **Water management**

The plant was designed for recycling water to be used 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 farmers in the community. Besides, SSI could maintain a commitment to the community following a social contract that SSI would not take water from dikes during drought season when the water level was lower than 2.2 meters. SSI operated according to 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 frequently 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.

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Over the past year SSI kept better control of water consumption in production process. The water consumption rate in hot-rolled steel sheet production process was 0.58 cubic meter per ton of production and in hot-rolled steel pickled and oiled sheet production process was 0.37 cubic meter per ton of production. Compared to 2009, the water consumption rates in hot-rolled steel sheet production process was 0.63 cubic meters per ton of production and in hot-rolled steel pickled and oiled sheets was 0.41 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 standard 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 applied them to a plan for adjustment.

## Pollution Control

- **Wastewater quality and Quality of water source related**

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

1. Examined quality of water in the plant compound 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 in the plant better than the standard for wastewater quality issued by Industry Ministry No. 2, B.E. 2539 in all items.

2. Examined 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 Thakham Canal, at the early and the end of Mae Ramphueng Canal. Based upon an examination of 10-index per station, the result showed quality of the water from the canals better than the standard for ground water quality (Type 3) Notification of the National Environment Board, No. 8, B.E. 2537 in all items.

3. Examined quality of underground water every 6 months from 9 stations by using an examination of 9 index per station. This examination was aimed at keeping any changes under surveillance since Thailand has not set any related standard yet. Over the past years, no significant change has been found from the examinations.

4. Co-operated with Sahaviriya Group's Environment Management and Promotion Center and Research Center of Marine Natural Resource and Coastline at the Middle part of Gulf of Thailand, Chumphon province in an examination of sea water quality at the pier of Prachuab Port Co., Ltd. based upon an examination of 10-index on 22 October 2010, the results fell into the range of standard in all items.

Besides the examinations by external organizations authorized by Industrial Works Department, SSI and Sahaviriya Group's Environmental Management and Promotion Center in also held a community co-examination program. The Company 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 waste water 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 to be examined by the community.

- o **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 to keep sulfur level mixed in fuel at under two percent. Thus, air emission from the SSI's plant had better quality than standards and requirements according to a report on the study of environmental effect of the plant.

For the production process of hot-rolled steel pickled and oiled sheets, SSI installed acidic fume trap system to recycle the outcome in both production line and acidic treatment unit. Air emission from the plant was better than standards and requirements according to a report on the study of the environmental effect of the plant.

The quality of air in the atmosphere around the plant has been frequently monitored and examined in various parameters related to the plant throughout the year. In 2010 the measurement of air quality at 5 stations including Ban Klang Aow, Ban Tha Manao, Ban Pak Khlong, Ban Tha Kham and Ban Thapmon relied on various parameters as follows:-

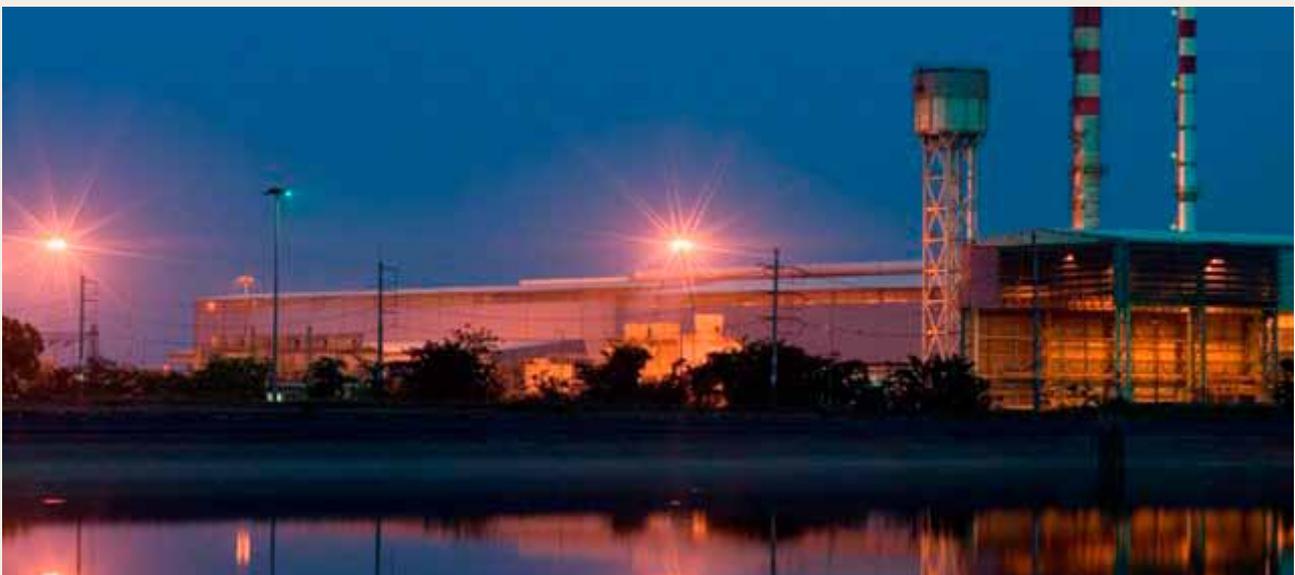
1. Average intensity of sulfur dioxide gas in the air per hour
2. Average intensity of oxide of Nitrogen in the air per hour
3. Average quantity of dust and particles in the air per hour
4. Average intensity of hydrogen chloride gas in the air per hour
5. Average quantity of under 10-Micron-size dust and particles in the air per hour

The result of air quality based on those parameters showed air quality at all stations far better than standards and no tendency of negative change of air at all stations and in all parameters.

Moreover, SSI co-operated with Sahaviriya Group's Environmental Management and Promotion Center to hold an educational project on an examination of rain water quality for community to help monitor acidic rain. The result showed the level of acidic-alkaline rain at 7.5. The figure was higher than criteria at 5.6, indicating high tendency of acidic rain. This activity was seen as co-operation with the community to help them gain knowledge and understanding so they would have confidence in the quality of rain at Bangsaphan district.

- o **Waste management policy**

SSI focused on reducing quantity of waste at its origin through several projects. Those included targeting for



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raw material loss in production with no more than 1.95 percent and later achieving slightly beyond target, at 2.06 percent. Another project was an ongoing project to reduce humidity in sediment from wastewater treatment system that was targeted to cut humidity down more than 12 percent. 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. Moreover, there were many projects which make use of waste and continuously help reduce waste from the plant, including a project of organic fertilizer from dead trees in the plants, a project to produce biomass fertilizer from food scraps, and a contest on creation from leftover items. In 2010 SSI totally produced 51,357 tons of industrial waste. Of that waste, 99.39 percent was eliminated by recycling process while 0.61 percent was put underground. The Company spent 10.1 million baht on waste management.

## Operation following laws, rules and regulations

SSI abhered to operate 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 and monitoring and examining quality of environment, request for permission to eliminate industrial waste, provision of result reports from pollution control system and from analysis of fuel oil quality. SSI completely achieved those on time. In 2010 SSI neither violated any environment-related laws nor regulations and received no legal order to halt or stop operation as well as no fine for any legal violation.

## Environmental governance project between the plant and community

SSI truly realized the importance of steel industrial operation to be in harmony with communities, society and environment by operating with good governance. For years, SSI has operated business based on rule of laws, transparency, ethics and corporate social and community responsibility. The Company, therefore, participated in the environmental governance between the plant and community project held by Industrial Works Department and was later approved in 2009 according to Industry Ministry's evaluation criteria.

Since 2009 Prachuap Khiri Khan Industry Office conducted a project of environmental governance between plants and community, the project has allowed other sectors to participate in evaluating the standard of environmental governance in industrial operation. Various activities were held, including setting strict evaluation criteria, appointing representatives from government organizations and communities around the plant as well as experts in various fields to evaluate. SSI has joined this project and passed the evaluation for environmental governance. The Company received a trophy award on environmental governance from Prachuap Khiri Khan Province Industry Office on 29 September 2010 presented by Prachuap Khiri Khan Governor Mr. Veera Sriwattantrakul.

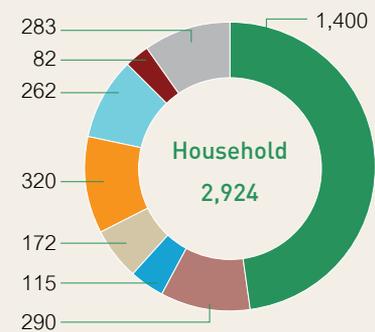


## Community opinion survey and participation process of the community in the environment stewardship

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 the Company to understand their perception through community leaders and household leaders on various effects from the operation of the plant over the year. For example, a cooperation in thinking and decision making between the plant and the community took place via participation process at community council and village meetings. 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 2010 SSI conducted an attitude survey on 354 samples from 7 villages and 1 municipality that totally consisted of 2,924 households (data in August 2010). The conclusion resulted as follows:

Subdistrict	Community	Household	No. of Samples	
			From Calculation	From Actual Study
Kamnerd Noppakoon	Kamnerd Noppakoon	1,400	168	170
	Subdistrict Municipal			
Mae Ramphueng	Moo 2 Ban Tha Manao	290	35	35
	Moo 3 Ban Aow Yang	115	14	14
	Moo 4 Ban Tha Kham	172	21	21
	Moo 5 Ban Pak Khlong	320	38	38
	Moo 6 Ban Klang Na	262	32	32
	Moo 7 Ban Thung Lan Khwai	82	10	10
	Moo 8 Ban Lang	283	34	34
Total		2,924	352	354



Most people in the communities were aware that the plant contributed for better economy of the community, such as creating jobs, accelerating trades and promoting community activities. The activities that satisfied the community included offering scholarships for the community youths, which helped create an opportunity in education for children, preserving Mae Ramphueng mangrove forest, which helped create better environment. However, the community was worried about the operation of the plant according to a survey in 2010.

Their concerns over 3 issues included dust particles problem, 6.8 percent, traffic problem, 3.7 percent and problem of rain water quality, 2.0 percent respectively. The order of their opinions changed compared to the previous survey in 2009 when dust particle problem was 5.1 percent while the problems of traffic and quality of rain water were 9.9 and 7.1 respectively. Their concerns about three problems dropped following the adjustment, solutions and PR campaigns were preceded by SSI together with the community and stakeholders continuously.



## Environmental Performance Index Water Quality (April and August 2010)

Index	unit	Analysis Result						Standard
		Tha Kham Canal		Upper Mae Ramphueng		Lower Mae Ramphueng		
		April 10	Aug 10	April 10	Aug 10	April 10	Aug 10	
pH	-	8.2	8.4	7.5	7.3	7.6	7.1	5 - 9
Suspended Solid	mg/L	14	38	16	72	8	51	-
Total Dissolved Solid	mg/L	28,950	10,950	30,450	18,450	31,567	19,350	-
Acidity	mg/L as CaCO <sub>3</sub>	2	<1	15	24	15	25	-
Alkalinity	mg/L as CaCO <sub>3</sub>	116	109	128	153	122	136	-
Chemical Oxygen Demand	mg/L as O <sub>2</sub>	1,673	140	4,428	210	1,525	220	-
Grease & Oil	mg/L	4	4	<3	5	3	4	-
Total Coliform Bacteria	MPN/100 mL	4.5	330.0	22.0	240.0	79.0	2,400	20,000
Iron	mg/L as Fe	0.32	0.25	0.69	2.19	0.49	0.64	-
Manganese	mg/L as Mn	0.06	<0.05	0.13	0.20	0.09	0.14	1.0

Standard : Ground water quality standard (Type 3) Notification of National Environment Board, No. 8, B.E. 2537

Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd.

Recorded by Mr. Vanich Phanpipit

Examined/controlled by Miss Yupaporn Chanpleng (๓-004-๙-745)

Analyzed by Miss Kanok-orn Anake (๓-004-๙-2158)

Telephone 0-2715-8700

## Ambient air quality around 5 stations (September 2010)

Index	Average of minimal-maximal quantity found	Standard
Quantity of dust and particles	0.023 - 0.063 mg/m <sup>3</sup>	0.330 <sup>1/</sup>
Quantity of sulfur dioxide gas	0.005 - 0.033 mg/m <sup>3</sup>	0.300 <sup>1/</sup>
Quantity of nitrogen dioxide gas	0.005 - 0.022 mg/m <sup>3</sup>	0.320 <sup>2/</sup>
Quantity of less than 10 microns in diameter	0.010 - 0.026 mg/m <sup>3</sup>	0.120 <sup>1/</sup>
Quantity of Hydrogen chloride <sup>3/</sup>	<0.001 mg/m <sup>3</sup>	-

Standard<sup>1/</sup> : Ambient Air Standards, Notification of National Environment Board, No. 24, B.E. 2547

Standard<sup>2/</sup> : Ambient Air Standards, Notification of National Environment Board, No. 21, B.E. 2544

Standard<sup>3/</sup> : Ambient Air Standards, Notification of National Environment Board, No. 10, B.E. 2538

Remark : - = No standard set in Thailand

: <0.001 is the score of Detection Limit of HCL

Measured/analyzed/controlled by SPS Consulting Service Co., Ltd.

Recorded by Mr. Olarn Boonphan and Miss Sukhon Chaokrib

Examined/controlled by Miss Siranee Yenjai (๓-011-๙-538)

Analyzed by Miss Nipaporn Chompuwong (๓-001-๙-3539)

Telephone 0-2939-4370-4

### Air emission from the Furnace I and II of Sahaviriya Steel Industries Plc. (November 2010)

Measurement Index	Result	Standard	Result	Standard
Quantity of particle intensity (mg/m <sup>3</sup> )	86.2	240 <sup>1/</sup>	86.2	240
Quantity of sulfur dioxide gas intensity (SO <sub>2</sub> )(ppm)	309	800 <sup>1/</sup>	309	800
Quantity of the intensity of oxide gas in nitrogen (NO <sub>x</sub> )(ppm)	47.2	200 <sup>1/</sup>	47.2	200
Quantity of carbon monoxide gas intensity (CO)(ppm)	2.29	690 <sup>2/</sup>	2.29	690

<sup>1/</sup> Standard of quantity of substances mixed in air emission from a steel plant (old), Notification of Science, Technology and Environment Ministry B.E. 2544  
(Calculation based on the quantity of 7 percent of excessive oxygen or 50 percent of volume of excessive air)

<sup>2/</sup> Standard of quantity of substances mixed in air emission from a plant Notification of Industry Ministry B.E. 2549  
(For general production that uses fuel burning)

Measured/analyzed/controlled by

ALS Laboratory Group (Thailand) Co., Ltd.

### Air emission from Furnace III of Sahaviriya Steel Industries Plc. (November 2010)

Measurement Index	Result	Standard	Result	Standard
Quantity of particle intensity (mg/m <sup>3</sup> )	70.9	120 <sup>1/</sup>	70.9	120
Quantity of sulfur dioxide gas intensity (SO <sub>2</sub> )(ppm)	519	800 <sup>1/</sup>	519	800
Quantity of the intensity of oxide gas in nitrogen (NO <sub>x</sub> )(ppm)	105	180 <sup>1/</sup>	105	180
Quantity of carbon monoxide gas intensity (CO)(ppm)	2.76	690 <sup>2/</sup>	2.76	690

<sup>1/</sup> Standard of quantity of substances mixed in air emission from a steel plant (new), Notification of Science, Technology and Environment Ministry B.E. 2544  
(Calculation based on the quantity of 7 percent of excessive oxygen or 50 percent of volume of excessive air)

<sup>2/</sup> Standard of quantity of substances mixed in air emission from a plant Notification of Industry Ministry B.E. 2549  
(For general production that uses fuel burning)

Measured/analyzed/controlled by

ALS Laboratory Group (Thailand) Co., Ltd.

### Air emission from the Scrubber PPPL (from the pickling and oiling process) (April 2010)

Measurement Index	Result	Standard	Result	Standard
Quantity of hydrogen chloride gas (mg/m <sup>3</sup> )	1.77	200 <sup>1/</sup>	1.77	200

<sup>1/</sup> Standard of quantity of substances mixed in air emission from a plant Notification of Industry Ministry B.E. 2549

(For general production without fuel burning; calculation based on volume of waste air in oxygen at actual environment while measuring)

### Air emission from Scrubber ARP (Acid regeneration plant) of Sahaviriya Steel Industries Plc. (from the recycling process of washing solution) (September 2010)

Measurement Index	Result	Standard	Result	Standard
Quantity of hydrogen chloride gas (mg/m <sup>3</sup> )	18.9	160 <sup>1/</sup>	18.9	160

<sup>1/</sup> Standard of quantity of substances mixed in air emission from a plant Notification of Industry Ministry B.E. 2549

(For general production with fuel burning; calculation based on quantity of 7 percent excessive oxygen or volume of 50 percent of excessive air)

### Air emission from the boiler (April 2010)

Measurement Index	Result	Standard	Result	Standard
Quantity of particle intensity (mg/m <sup>3</sup> )	0.17	120 <sup>1/</sup>	0.17	120
Quantity of sulfur dioxide gas intensity (SO <sub>2</sub> )(ppm)	<2.0	800 <sup>1/</sup>	<2.0	800
Quantity of the intensity of oxide gas in nitrogen (NO <sub>x</sub> )(ppm)	86.6	180 <sup>1/</sup>	86.6	180
Quantity of carbon monoxide gas intensity (CO)(ppm)	1.18	690 <sup>2/</sup>	1.18	690

<sup>1/</sup> Standard of quantity of substances mixed in air emission from a steel plant (new), Notification of Science, Technology and Environment Ministry B.E. 2544  
(Calculation based on the quantity of 7 percent of excessive oxygen or 50 percent of volume of excessive air)

<sup>2/</sup> Standard of quantity of substances mixed in air emission from a plant Notification of Industry Ministry B.E. 2549

(For general production that uses fuel burning; calculation based on the quantity of 7 percent of excessive oxygen or 50 percent of volume of excessive air)

### Air emission from the Dust Collector (August 2010)

Measurement Index	Result	Standard	Result	Standard
Quantity of particle intensity (mg/m <sup>3</sup> )	18.9	160 <sup>1/</sup>	18.9	160

<sup>1/</sup> Standard of quantity of substances mixed in air emission from a steel plant (new), Notification of Science, Technology and Environment Ministry B.E. 2544  
(Calculation based on the quantity of 7 percent of excessive oxygen or 50 percent of volume of excessive air)

## Development and Participation in Society & Community

### ► Social Responsibility Activities “innovate • strength”

With an aim to achieve our vision of “Innovate premium value steel products and services for customer; generate consistent profit and sustainable value for stakeholders” the Company continuously held social and community responsibility activities. As well as operating based upon good governance, the Company initiated new projects based upon sustainable development concepts. These projects focused on promoting and developing the under privileged in society, and involved all parties (including the Company, staff, community residents and organisations) working through 45 different activities such as educational development, staff voluntary activities under “SSI Arsa (SSI Volunteer Spirit)” project, environmental, religious and cultural promotion and protection, occupational development and healthcare promotion. These projects showed the Company’s strong intention to be good citizens and to gain trust from Bangsaphan residents and stakeholders. The Company also hoped to create strength for the community and good living quality for the society.

The Company is confident that strength in all levels (from an individual, family, organization and society as a whole) is critical for the survival of an individual and the country. It is also an inspiration for sustainable development in a positive direction. In order to make social responsibility activities successful, the SSI’s office of Public Relations and SSI Public Relations Community set clear guidelines concerning the nature of the business. The guidelines focus on the benefit and strength of the under privileged and younger people, as well as the development of the whole steel industry by emphasis on participation.



#### Mr. Paiboon Thamruangrith

Artist  
and University Lecturer



“I personally admire the social responsibility activities from SSI. When I participated as a guest instructor, teacher and judge in an activity held by SSI, I admired the Company more as each project or activity needs so many factors putting together to make it happens. Basically, an activity must come from an organization that shows its real intention and responsibility to the society and the community where it operates. For example, a drawing contest for scholarships, the Slip Sarn Fan Pan Nam Jai project which has been held every year. This contest was an excellent beginning for Thai children including the ones at Bangsaphan and Bangkok to have an opportunity to learn, experience and gain inspiration. I must thank the Company for offering children the opportunity to participate the activity, and I look forward to the Company continuing to hold such good projects in the future”.

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### Strengthening the Society and Vulnerable Children

#### o SSI Sponsorship for Phra Dabos Instructors:

This is a project which provides scholarships to the Phra Dabos Foundation graduates so they can continue into further education. Once further education is completed they can transfer their knowledge back through the Phra Dabos Foundation as a teacher or supervisor to support new generations. The Company aimed to create 10 Phra Dabos teachers within 4 years (2007 - 2010) by offering scholarships worth 2 million baht. This would be done through 3 levels: high occupational certificate, undergraduate and graduate. On 1 June 2010 the Company gave the foundation the final and fourth offering of scholarships worth 180,000 baht. At present 6 scholarship awardees have graduated and returned to work with the foundation.

#### o Thailand Iron Man Mini Marathon 2010 for Charity:

The Company co-operated with three other steel producers (Thai Cold Rolled Steel Sheet PLC, Bluescope Steel (Thailand) Co., Ltd. and Siam United Steel (1995) Co., Ltd. and other sponsors to hold a marathon charity activity in which more than 2,295,881 million baht was raised. The funds went to support 18 organizations and foundations that help vulnerable children and the disabled. The event is held annually and 1,000 participants took part in its third year.

The 2<sup>nd</sup> Thailand Iron Man Mini Marathon 2009 received more than 1.9 million baht contributed fund which was donated to 18 non-profit organizations that support

underprivileged and disabled people. There were 1,500 people participating in the event.

Thailand Iron Man Mini Marathon was developed from "SSI Mini Marathon 2008" which was the co-operation between SSI and Sahaviriya Group's staff, business partners and the public. This activity aimed at collecting fund to support underprivileged and disabled people. The marathon was arranged in September 2008 with 1,000 attendants and gained 1.9 million baht for 13 non-profit organizations supporting underprivileged people.

#### o SSI Arsa (SSI Volunteer Spirit):

The SSI Arsa Project is a voluntary project which the Company's staff and management co-organized. In its third year in 2010, the Company together with local administration organizations, community leaders and local residents of Bangsaphan, organized 5 activities. These activities included:

1. Co-operating with Khlong Pak Pid Conservation Group, Phongprasas sub-district in the development and construction of a pond for black crab breeding, and a nursery house for young mangrove trees so that the mangrove forest in Bangsaphan could be increased. The latter activity was to develop the young mangrove breed to be suitable for the geographic condition of Bangsaphan. 207 staff participated in the activity which was held on 22 - 26 February 2010.

2. SSI Beach Clean-up project was held in commemoration of World Environment Day. The Company worked with shop operators on Mae Ramphueng Beach, and the general public collected trash from along 3 kilometers of the beach. 500 staff participated in the event.

3. A project to improve organic plant pots without soil for a lunch program at 7 schools (Ban Suan Luang, Sotsuksa Terparat, Bangsaphan Kindergarten, Ban Tha Kham, Huay Sai Khao, Mathayom Nopakhun and Ban Don Samran). Held on 14 - 19 June 2010, there were 202 participants.

4. The development of Wat Cha-muang and the production of a mixture of organic fertilizer at Wat Cha-muang School, Phongprasas sub-district. The Company worked alongside community leaders and local residents to hold this event. The activities included constructing a concrete floor at the temple's hall. This project was proposed by SSI

staff living in the Cha-muang community. A total of 365 SSI staff joined in the activity.

5. The construction of a garbage bank and public facilities at Ban Morasuab School, Chaikasem sub-district from 9 November to 2 December 2010. There were 253 SSI staff who participated in the activity.

In 2010 some 1,567 SSI staff spent 12,536 hours volunteering in social and community activities, whilst 500 community residents joined them. The SSI Arsa project officially has begun in 2008.

- **“Do D In A Day”: SSI Arsa helps the Blind Read Books:** SSI staff in the Bangkok office compiled the first set (29 soft files) of a Braille book which was being produced for the blind. They also provided monetary support for later publishing and also reused the paper of 500 books which were made into Braille notebooks and then given to the Educational Technology Centre for the Blind, Foundation for the Blind in Thailand, Pak Kret district, Nonthaburi province. This SSI project is another activity which enhanced good spirit amongst SSI staff, whilst encouraging them to share happiness in society by participating in charity events to help vulnerable children. There were 115 SSI staff and the general public taking part in this event, with an aim to produce 41 books for the blind.

- **The 2<sup>nd</sup> Silp Sarn Fun Pan Nam Jai SSI Chuan Nog Rak Nam (SSI Invites Young People to Preserve and Protect Water) Project:** This SSI art project was aimed at vulnerable children and children with social problems so that they could

learn and practice drawing from professional artists, and to use their imagination to create work as a method of art therapy. More than 100 young people from 5 associations, charity organizations and foundations participated in this project. The selected pieces would later be sent to the 41<sup>st</sup> International Children’s Art Exhibition contest in Tokyo, Japan.

It was originally the Silp Sarn Fun Pan Nam Jai project in 2006 that targeted children in 15 schools and charity organizations and more than 1,600 children joined the activity. Later it became Silp Sarn Fun Pue Nong Duay Rak (Art for Children, with our Love) project that was aimed at vulnerable children with artistic talent. Therefore, they could create art work to gain scholarships and also to gain pride from taking part in a drawing contest and participation in an international competition. In 2007 - 2008 more than 350 children took part in the project. Until 2010, SSI has already helped to make the dreams of 2,150 vulnerable children come true.

- **A Charity “Swim, Ride, Run for Vulnerable Children”:** This is an additional activity of the International Bangsaphan Iron Man Triathlon 2010, with the aim to provide an opportunity to staff and the general public to take part in the activity by giving monetary support to the Sahaviriya Triathlon Team. The Company had wristbands “Strength to Live” made as souvenirs for those who donated 100 - 300 baht, whilst those that donated at least 300 baht would receive a shirt as a souvenir. All donations (without deductions of expenses) went to charity activities for the under privileged. Donors



could also specify their preference to support by choosing a charity out of 4 categories, including social victims, the disabled, the needy in poor remote areas and victims from natural disaster. There were 386 donors at the event and a total of 91,613 baht were donated.

- Offered proceeds from “Swim, Ride and Run Race” to Princess Pa Foundation for Flood Victims: The Sahaviriya Group’s staff and the general public who joined the 2010 Bangsaphan Iron Man International Triathlon donated 20,000 baht from the Swim, Ride and Run activity for the Princess Pa Foundation and the Thai Red Cross Society to help flood victims in different affected areas.

- Offered 500,000 baht for Mae Khong Phandin (Mother of the Nature): This donation was aimed to support the operation for the prevention and solution of drug problems in villages and communities. It was in support of the royal charity’s project initiation in commemoration with the 78<sup>th</sup> birthday anniversary of Her Majesty the Queen.

- SSI Contributions for Flood Victims: SSI donated necessities worth 600,000 baht for flood victims. These necessities included rice, dry food, milk, water, medicine, electric torches, sanitary napkins, mosquito spray and other items which were sent to a relief centre for flood victims in Nakhon Ratchasima province to help people in the affected areas.

- Donation of Money and Necessities for Learning and Teaching Development at Ard-ya School, Surin province: This activity was arranged to help a school that was burnt down. SSI staff and the companies under Sahaviriya Group also donated personal money.

- Donation for Construction of a Building and a Playground at Yanwisit School, Pawor sub-district, Tak province: The school is located in a remote area and in need of support. As well as monetary support, SSI also donated educational items for the school through Tharn Nam Jai TV programme.

- Donation from the Thailand Iron Man Mini Marathon 2009: The donation was presented to Mr. Kamol Suwanakachat, the School Director of Raj Prachanukroa 20 schools in Chumphon province to later spend on construction of a multipurpose building and other useful activities.

### Steel Development to Improve the Living Standard

- Thailand Steel House Contest 2010: The reward of receiving Her Royal Highness Princess Maha Chakri Sirindhorn Trophy and more than 1 million baht prize money was aimed at promoting steel innovation. It was also used as a centre stage for architects, engineers and those in the metallurgy circle to learn and exchange knowledge about steel application for housing and later develop new knowledge.

In 2010 a total of 319 groups applied to enter the contest, including 60 professional teams and 259 student teams. After being informed about the project, 23 professional level groups sent 26 work pieces whilst 98 student level groups sent 114. The judge selected 10 groups out of a total of 121 groups. The groups that passed through to the final round of the contest for 2010 included:

Student Category	Professional Category
Winner: STU 77	Winner: Ruen Lhek (Iron House)
1 <sup>st</sup> Runner Up: ZU	* Consolation Prizes:
2 <sup>nd</sup> Runner Up: Rareng Studio	Ugly Duck Lab, Design (UDD),
2 Consolation Prizes: SV DESIGN and ARCHKID	Apple, Studio and C2



\* 4 participants passed through but none of them received runner up awards. The judges agreed to give them consolation prizes.

In the final round, Wentle House by STU 77 from Chulalongkorn University won the student category whilst Bee House by Ruen Lhek won in the professional category. On 4 January 2011 at Sala Dusitalai, Chitralada Royal Court the winners received the royal trophy from HR Highness Princess Mahachakri Sirindhorn and cash worth more than 1 million baht.

- **A Support for Outstanding Metallurgist Projects:** This project offered awards for excellent metallurgists at Thailand's Metallurgy Conference 2010 on 17 - 19 November 2010 at Greenery Resort, Khao Yai.

In 2010 the Company supported two awards for top researches of the year; the Metallurgist Award 2010 for Associate Professor Dr. Parithas Panthubanyong who is currently the director of Thai - Japan Technology Promotion Association and the Youth Metallurgist Award 2010 for Dr. Akarat Waiyanit, researcher at the National Metal and Materials Technology Centre (MTEC), Thailand.

The conference was first held in 2007 by MTEC in co-operation with the Metallurgy and Materials Science Research Institute of Chulalongkorn University, Iron and Steel Institute of Thailand as well as the Thai steel industry. It has been held annually and has received a warm welcome from metallurgists every year. Top metallurgists and young metallurgists were selected from a list of metallurgists all over the country, whose work affected the development of knowledge foundation and industrial development,

as well as development of metallurgy professions and academic in national and international levels.

## Culture Nourishment

- **SSI sponsored a trip for Suan Plu Chorus:** This is a project developed to promote Thai culture abroad. The group travelled and performed at UNESCO offices in France and Germany.

## ► Involvement in the Community "Good Life Quality for Sustainable Community"

SSI held community development activities with participants from parties including the Company, staff, community residents and organizations. Various activities were organized through 45 projects that focused on community development, educational promotion and staff's voluntary activities or SSI Arsa. Environmental, occupational development, health and hygiene, religion and cultural protection and promotion were also included. Those activities reflected the Company's commitment of being good citizens, with an aim to build strength for the community and society. Meanwhile, they reflected the trust that the Company gained from Bangsaphan residents and our stakeholders.

### Mr. Prakob Kongthap

Chief of Phongprasas Sub-district



"It is a good opportunity for the Bangsaphan community to have SSI in operation here. The Company does not just operate its business but creates good things and gives back to society and the community as well. It also invigorates the district's economy and brings about many good projects and activities that involves the community, including education development projects such as giving scholarships and computers, occupational development projects, job creation, creating incomes, promoting goodness in the community, promoting quality of life as well as preserving the community environment. On behalf of Bangsaphan residents, I would like to express our gratitude and appreciation to the Company."

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### Development to upgrade community education quality

The Company took part in the development of educational quality at Bangsaphan and nearby areas, in order to help the young people at Bangsaphan to gain better educational opportunities, similar to those in big cities. The project focused on three different targets; development for teachers and personnel related in learning and teaching, development of students or learners and development of academic or learning places.

- The Project of Knowledge Development for Teachers and Educational Personnel:** The Company co-operated with the Office of Prachuap Khiri Khan Educational Service Area Zone 1 and held a development project to improve the knowledge and ability of educational personnel. The activities included a series of seminars to create and promote knowledge amongst the school's executives and management and to improve learning and teaching ability (especially educational development amongst teachers and personnel through training). In 2010 the Company held a three course seminar based on knowledge development for teachers and educational personnel. The participants included 140 English Language teachers, 145 Thai Language teachers and 155 mathematics teachers. The by-product from the seminar was 450 sets of test documents were used for standard tutoring. The test document was based upon the subjects, which then could be used for teaching or tutoring students so that they could gain better academic achievements.

From 2005 to 2010 with the project development of educational quality, the Company co-organized

20 programmes for ability development of teachers and school management and welcomed 3,589 participants. The Company also took part in the project for promoting knowledge for specialised teachers 14 times. There were 2,112 participants in the project.

- Scholarship to Students in the Community:** The Company and Sahaviriya Group offered scholarships to students at schools in Bangsaphan district (from primary school to secondary school level). In 2010 the Company provided 289 scholarships to students from 15 schools and 6 continuous scholarships until graduation.

- Support Fund for the Bi-lingual education program:** The Company supported a tutor for kindergarten level education and an English tutor at Suan Luang School.

- A Scholarship Drawing Contest:** The Company held an annual drawing contest for children, in which the judges were art experts in the national youth art contests, including Mr. Sangkom Thongmee, Director of Sirindhorn Art Centre and Mr. Paiboon Thamruangrit, Artist and award winners from many national art contests. The project was held continuously from 2004 until 2010 for students in all levels in Bangsaphan district. It was aimed to promote development of creative thinking and artistic skills amongst both able-bodied and disabled students. In 2010, 448 students including students with hearing problems participated in the contest, and a number of the participants were selected for international contests.

- Follow up and Improvement of Substrate Culture Organic Farming:** Held at 7 schools in Bangsaphan district, the pilot project promoted growing plants in other materials besides soil. These materials included organic substances such as coconut fibre, risk husk ash, sawdust and other mixed materials as well as inorganic substances. The aim was to help schools and the community to have a learning centre where they can learn organic agriculture, soil free growing and using organic products for their school lunch. It also helped teachers and students to learn, understand and gain both new skills and experience in organic agriculture. The rest of the production would be sold to bring more income to schools for further production.

- To Be Engineer Project:** This project was to encourage Thai students to learn about the steel industry

whilst promoting secondary students at Bangsaphan to a further education in Engineering. During 2005 - 2010 the project was held 6 times and produced 5,258 young engineers. In 2010, 848 students from Mathayom 3 and first year occupational school levels joining the project.

- **Sahaviriya Summer Camp Project:** The summer camp recruited young people in Mathayom 4 - 6 who were interested in participation of learning activities. The activities held during the school break were divided based on 4 different subjects; English, Computers, Art and Occupational. The main objective was to promote integrated knowledge to the young people who could increase their knowledge through learning skills in both theory and practice.

In 2010 a total of 214 children joined the 7<sup>th</sup> Sahaviriya Summer Camp, which was held at Bangsaphan Kindergarten School and Ban Suan Luang School. A group of the young participants from the occupational promotion camp also raised funds from selling food that they learned to cook at the camp and gave the proceeds to the Paweena Hongsakul Foundation.

- **SSI English Camp for the Bangsaphan Youth:** The 3 day camp had 120 youngsters taking part from Bangsaphan and the nearby area to experience learning activities and recreational games.

- **Sahaviriya Group Challenge Project 2010:** This challenge was to seek the top student with a mathematical talent from all over Prachuap Khiri Khan province. More than 500 interested students joined in the competition but only one would be selected as a representative of the province to enter the national competition.

- **Support the Construction of a School Building at Ban Toong Ka-ton School:** Bangsaphan Noi district, under the Office of Prachaup Khiri Khan Educational Service, Area 1. The school had 500 students in 16 classes but its building was in very poor condition. Despite this problem, the quality of Prathom 6 education had average grades of 53.19 or higher than any other schools in the same educational area, according to the result from the National Education Quality Evaluation (O-Net). The Company also provided learning and teaching materials to support school activities that were useful to students, community and others.

## Career Development to Empower Household Economy

It has been 20 years since the Company has operated in Bangsaphan district where agriculture is its main occupation. The major crops are pineapple, rubber trees and coconut. It has already been proven that agriculture and industrial societies can live harmoniously and develop together with mutual support. This means that people in the community have jobs and sufficient income whilst maintaining their culture and a way of Thai lifestyle. The Company also held a project to promote agricultural development to increase incomes for farmers and housewives as follows:

- **Organic Fertilizer Bank "Sustainable Progress":** Under this project, two groups of farmers would be selected annually to participate in the activity at Bangsaphan. Each group must consist of 50 members and produce 100 tons of

## Result from SSI Organic Fertilizer Bank Project

Measurement Index	Production (Time)	Quantity (Ton)	Sale (Ton)	Income (Baht)	Expense (Baht)	Remark
Moo 4 Phongprasas	2 <sup>nd</sup>	120	120	129,000	120,000	Ongoing production for the 3 <sup>rd</sup> time
Moo 3 Thongchai	1 <sup>st</sup>	100	100	120,000	120,000	Waiting for a decision for the next production
Moo 1 Kamnerd Noppakoon	1 <sup>st</sup>	100	100	120,000	120,000	Preparing for the next production
Moo 2 Mae Ramphueng	1 <sup>st</sup>	35	35	45,000	40,000	Waiting for the next production
Moo 7 Mae Ramphueng	1 <sup>st</sup>	35	-	-	40,000	Waiting for packing for sales later
Moo 8 Mae Ramphueng	1 <sup>st</sup>	35	15	23,400	40,000	20 days left
Moo 9 Phongprasas	1 <sup>st</sup>	100	-	-	120,000	Ongoing production
Moo 3 Kamnerd Nophakoon	1 <sup>st</sup>	100	-	-	120,000	Ongoing production

organic fertilizer by using a 120,000 baht budget supported by the Company. Later, after their sales of fertilizer, the farmers must save a part of the profit and spent the rest of their income on rotating costs for their next production. This was considered a good start to get community farmers to develop their capability whilst learning and practicing. This was aimed to help improve the community economy to be stronger and self sustainable based upon the sustainable development concept initiated by His Majesty the King. In 2010 the project welcomed two more groups including Pongprasas group and Kamnerd Noppakoon group. Since starting in 2008, until 2010, there were 8 sustainable organic fertilizer banks with 386 members.

- **The Engineering for Society Project:** In co-operation with West Coast Engineering Co., Ltd., SSI developed a machine to erase harvested kernels of oil palm and materials for the mixture of organic fertilizer. Those products were sold at the lower than market price to the organic fertilizer bank, Phongprasas branch, for Mr. Prasit Mhuenwong Group. The group could increase the productivity of organic piles after replacing manpower with this machine named Viriya 01.

- **Develop Knowledge in Agricultural Technology and Promote Information on Agricultural Technology amongst Farmers to Increase their Incomes:** Alongside the District Agricultural Office, Land Development Office of Prachuap Khiri Khan, the Company organized training on agricultural technology and new information about agriculture that answered the market needs. This was to get farmers to improve production, increase incomes and have a sustainable, quality living. In 2010 the Company supported 4 seminars for farmers in Bangsaphan who grew major economic crops. The seminars included the following urgent topics:

1. The situation of rubber and the technique of growing new rubber plantation. There were 54 rubber farmers participating in this seminar.

2. Using of organic fertilizer to improve soil for growing economic crops in Bangsaphan, 55 farmers joined this seminar.

3. Growing plants with soil-replacing materials, 50 participants.

4. The direction of development of economic crop growing in Bangsaphan. In 2011, 50 farmers joined the seminar.

Over the past year, 218 farmers have participated in the seminars. From 2005 to 2010 a total of 38 seminars on agricultural technology for 4 groups of economic crops were held. There were 2,867 participants at the seminars.

- **Poo Dam Making Money Project:** The Company worked with Khlong Ban Pak Pid Moo 1 environment conservation group, Phongprasas sub-district to create a project to help local fishermen build crab ponds. The crab farming project was aimed to help fishermen gain extra income from selling grown crabs and use part of the income as rotating costs for further investment. The activity would help reduce the cutting down of the mangrove trees by community residents for charcoal making and selling. The rest of the income will be spent on the mangrove conservation project to help the community have fertile land for their living. There were 50 members of the conservation group taking part.

- **Mobile Community Products:** The Company promoted different occupational groups to bring more than 100 items of goods and products to sell at the Company. These included fresh seafood, processed vegetables and fruits, wicker ware and handicrafts. This project was to increase the sales channel and income for good producers in Bangsaphan. The fair was held monthly and created an average of 40,000 - 70,000 baht revenue each time.



- **Agricultural Radio Program:** The project provided farmers information through a community radio programme that was divided into 12 series. The programme focused on promoting agriculture and its information.

- **Mobile Clinic for Agriculturalist:** This was led by students from Bangsaphan Occupational College and Prachuap Khiri Khan Technical College under the supervision of their teachers. This mobile clinic went to 7 sub-districts on a rotating basis and provided an examination and repair service for electrical goods, tools and agricultural machines to farmers.

## Conservation and Development

The Company realised the importance of their responsibility to the environment and natural resource. Thus, the Company oversaw the production process to ensure that substances released from production would not affect the quality of life and occupational health of Company staff and the community. The Company also co-operated with organizations involved to continuously hold campaigns and activities to promote environmental quality. In 2008 the Company received the Excellent Industrial Award on Protection of Environmental Quality from the Prime Minister.

- **Community Sampling House Project:** The Company worked with 50 members of the Khlong Ban Pak Pid Environment Conservation Group in constructing a nursery house for young mangrove breeding, suitable for growing at Bangsaphan and packing soil for young mangroves.

The budget for young mangrove growing came from black crab sales from the black crab bank project (Pu Dam Tham Nger).

- **The Project for 830 Pine Trees Growing and Freeing Young Water Animals at the Beach, Phongprasas Sub-district:**

At the event, with a ceremony to pledge alliance to the Monarch on 3 December 2010 there were more than 3,000 participants, including teachers, students, government officers and local residents. This was to commemorate His Majesty the King's Birthday Anniversary.

- **SSI Beach Clean-up Project:** This was an annual activity held by SSI staff and Sahaviriya Group, co-operating with businesses and beach shop operators to collect trash and to clean 3 kilometers of Mae Ramphueng Beach. There were more than 500 participants in the project for 2010.

- **The 6<sup>th</sup> Junior Conservation Camp:** The Company co-operated with a group of science teachers in Bangsaphan to provide information to 78 student representatives from schools all over Bangsaphan district. The information included natural environment sciences, conservation and cultivation of natural resources in the community. From 2006 to 2010 the project created 6 groups of youth representatives from all schools in Bangsaphan and 428 members of the conservation network in the district.

- **SSI Garbage Bank Project:** The Company, along with 5 schools in the community (Ban Nai Lok, Ban Nong Ya Plong, Ban Sanam Luang, Bangsaphan Kindergarten and Ban Khlong Loi School) have set up a Garbage Bank. In 2010

## The Project to Follow Up results from SSI School Garbage Banks (Date as at 31 December 2010)

School	Action period	Quantity (kg.)	Income (Baht)	Expense (Baht)	Net Income
1. Ban Nai Lok	Jan - Aug 2010	711.70	5,379.00	1,657.00	4,433.70
2. Ban Khlong Loi	Jan - Aug 2010	2,080.80	3,918.00	3,340.00	2,658.80
3. Ban Nong Ya Plong	Jan - Aug 2010	1,165.10	6,545.21	-	7,710.31
4. Bangsaphan Kindergarten	Jan - Aug 2010	1,223.00	5,812.65	-	7,035.65
5. Ban Suan Luang	Jan - Aug 2010	1,464.25	3,984.50	1,000.00	4,448.75
6. Ban Morasuab	Started in December 2010				
Total		6,644.85	25,639.36	5,997.00	26,287.21

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the project generated a 31,812 baht income and was able to set up another Garbage Bank at Ban Marasuab School. This project was to enable local youngsters to understand garbage so they could manage, separate and eradicate it properly and recycle. This activity was an extension of the project Kru Technology Sa-Ard (Clean Technology Teachers), which focused on teachers and school management to learn and understand an application of local technology to efficiently manage garbage and waste from various sources. The project was a pilot to extend a concept to the project Model Recycle Garbage Bank, that the Company planned to promote in schools in the Bangsaphan community.

- **Super Smart Intelligent Kids:** This project was established to promote accurate knowledge and understanding about environment protection of the organization and community. The activities included promoting young people to properly measure the quality of water collected from different sources, such as the area in and around the plant. These activities allowed the youngsters to experience real life learning sources and created a co-operation network between schools in the community and the organization. There were 112 youths participating in this project at Mae Ramphueng sub-district.

- **Junior Detective:** The Youth Spy Project was aimed at encouraging local youngsters to investigate the environment in Bangsaphan district, and promote scientific and journalist learning. In 2010, 20 students from two groups at Chaikasem School and Steel Management and Bangsaphan Steel Technology College provided information through TV programme

production (subscribing for members in Bangsaphan area) with two topics, Water and Industrial plant and Scale in Steel Industry.

## Society Nourishment-Culture and Religious Maintenance

In the society of Bangsaphan, the community live together in harmony and mutuality based on a healthy culture and tradition. As a good citizen of Bangsaphan, the Company co-operated and supported different community groups that are in suffering and helped maintain the beauty of the religion and Thai culture, including;

- **Disaster and Natural Relief:** In 2010, people in Bangsaphan suffered from drought and water shortage for consumption and agricultural use. This was when the relief centre for drought victims at Bangsaphan was created. To help relieve the problem and take responsibility to the community, the Company joined the relief centre to send water trucks. The water distribution mission was held 6 times for 35 households (average 5 - 6 households each time) with a total of 70,000 litres of water provided.

- **Cultural and Religious Support:** The Company supported repairs for religious places and also the construction of a main hall at the community temple. The Company also took part in major religious and traditional activities in the community and supported various activities that promoted religious and Thai traditional values.

- **Supported Budgets to Local Organizations for Community Development:** This included arranging beds for blood donation to the Thai Red Cross Unit, Loy Krathong Day Activity, a tourist promotion activity at Bangsaphan titled "Amazing Bangsaphan" Event and Bangsaphan Tamnan Muang Thong Noppakoon Event.

- **The Project for Healthcare Education for Groups of People at Bangsaphan District:** The Company, along with a health service network including Bangsaphan Hospital and the local public health authority, held a seminar to educate the elderly about healthcare and held activities to preserve Thai culture on the Elderly Day.

## Promotion of Life Quality

o **The 2010 Bangsaphan Iron Man International Triathlon (or 2010 Khon Lek):** The Bangsaphan International Triathlon was held by SSI, co-operating with other companies under Sahaviriya Group and the Triathlon Association of Thailand. This sport activity replaced the tree growing and crab freeing previously held in commemoration of the birthday anniversary of Her Majesty the Queen. The activity helped to promote and alert Bangsaphan residents and interested people (including Thai and foreign tourists) to visit Bangsaphan district. This would create more income into the community.

The first triathlon at Bangsaphan district was held on 8 August 2010, integrating with the health promotion activities of the people in the community. The event was to encourage people to pay attention to health and to promote tourism of Bangsaphan to the world. The completion was divided into two categories:

1. Running for Health - a 5 kilometer free run contest.
2. Sprint Triathlon - consisting of a 750 meter swim, 20 kilometer cycle ride and a 10 kilometer run. There were 122 participants and 24 colleagues from Sahaviriya Group's Management joined a triathlon team category (of which there was 8 teams).

A total of 2,919 people participated in the activity, including voluntary contestants, tourists, government organization and the general public. These participants

were impressed with the warm welcome and the beautiful place and wanted the activity to be continued on a regular basis.

o **Public Healthcare Mobile Service:** This activity titled "SSI Happiness Caravan" included dental care, agricultural tool repair, recreation activities and a hairdressing service for people in all sub-districts of Bangsaphan. The project was aimed to promote the health of the community and to reduce costs. In the second year its service was extended to 7 sub-districts. In 2010, 1,065 people in Bangsaphan joined in the activity for the seventh time.

o **The 2010 Elderly Day:** On 8 April 2010, SSI in co-operation with Bangsaphan Hospital and the Health Service Network organized this event to help promote Thai culture and improve relationships amongst family members. Health and recreational activities were integrated for the elderly in the community and a number of services were provided such as a basic medical examination and body, weight and blood pressure measurement. The results from the examinations would be used as data to assess health conditions and the self-care of the elderly. They would also be used for analysis of the four major substances (earth, water, wind and fire), known as the key components of an individual. This would enable a participant to self-care according to their substance. Other activities were praying and meditation so that those joining in could relax and be ready for later activities such as muscle stretching exercises. In total, 78 seniors joined the activity.



## Sport Promotion for Healthy People in the Community

Sport not only helps create a strong body, but also promotes a good attitude and mind. Therefore, the Company continuously promoted sport activities amongst staff, students and the public around the plant including:

- **Company Annual Sports for Employees:** This seasonal activity is to promote good health and create unity amongst staff. Each year more than 800 staff (equates to more than 90 percent) take part.

- **Held Sport Competitions between Company Staff and Officers from Local Organizations:** These were held to promote good co-operation and harmony with the community around the plant. In 2010 there were 16 competitions and 7,500 participants.

- **Support Community Student Sport Events:** The Company supported an annual sports game for students at Bangsaphan (titled the Bangsaphan Games), which was aimed to promote good health and spirit as well as sportsmanship amongst students. More than 1,800 teachers and students took part in this activity.

## Unwavering Dedication to Adhere to Social Responsibilities

- **CSR DIW Project:** This is an award given to companies that fulfils social responsibilities through the adjudication process, based on the ISO26000 by the Department of Industrial Works (DIW) and Management System Certification Institute (MASC). This project was aimed to promote industrial operators to have social responsibility following Industrial Ministry's standards.

SSI participated in this project and was awarded for their outstanding operations with regards to corporate social responsibility standards for 2009. The Company continuously took part in this project through conferences, seminars and becoming a member of the CSR DIW network. In 2010 a self evaluation report on social responsibility of

CSR-DIW was completed, and were later awarded with the CSR DIW Continuous Award.

- **CSR Award at the SET Awards 2010:** This award was organized by the Stock Exchange of Thailand (SET) and Money & Banking Magazine for outstanding companies listed in the Stock Exchange of Thailand (SET), Executives of the listed companies, finance brokers and investment brokers. The awards were aimed at outstanding companies in different aspects, including a listed company outstanding in operation with corporate social and environmental responsibility (CSR Awards). Amongst the list of 41 businesses that was each worth more than 10,000 million baht in the SET Category, SSI was rated with an average score which was higher than any other Company in the same category (98.43 percent compared to 87.65 percent of the average score). The survey covered various issues including the overall operation, and social responsibility. Those issues included environment, labour, human rights, fair operation, responsibility to consumers, products and services, community development and participation and good governance as well as innovation and innovation dissemination due to social responsibility.

- **CSR Day for Directors:** The CSR Day for Directors was held by the Corporate Social Responsibility Institute (CSRI), the SET and the Thaipat Institute. It was arranged for 30 companies' top management and SSI supervisors to exchange information on social responsibility. Dr. Pipat Yodpruetikarm, Director of Thaipat Institute presented details of the concept of complete corporate social responsibility to the various organisations that took part.

Throughout the last 20 years, it has become obvious that SSI has continuously operated with social and community responsibility. The Company operated with a mission to create strength for the business and brought knowledge that it gained from work experience, both inside and outside the organization. This has been applied and extended to the society and SSI aimed to take part in social creation and promotion from community to national level, and to continuously strengthen our country in the long term.

## Human Resource and Rights

### ► Create Jobs, Create Happiness

In 2010 the Company set a vision and mission statement “Innovate premium value steel products and services for customer; generate consistent profit and sustainable value for stakeholders” One of the most important stakeholders in the Company is “staff”. Adhering to this statement, the Company brought in a “Happy Workplace” concept. The Company also instilled modern human resource management, including “organization success” and “smiles of staff”.

According to these practices, the Company was selected by the Physical Education Department of Tourism and Sports Ministry to receive an award for Excellent Business Operator / Workplace Recreation. As well as this award, the Company also received the Excellent Workplace for Worker Relations and Worker Welfares from the Labour Ministry in 2010, which made it the eighth year that the Company has received the award. The Company also improved its labour standard system from Thai Labour Standard (TLS) 8001-2003 to TLS 8001-2010, making staff and their families feel happy and proud to work with the Company.

Staff	Number (Person)
Executive Level	26
Management Level	104
Supervisor Level	441
Operation Level	428
Total	999

**Remarks:** on 31 December 2010

SSI's Success Connects to  
Our Staff's Happiness

Happy Workplace

“Staff are considered as internal stakeholders, who are essential to mobilise the business of a company. SSI involved staff in the participation of policy setting and management by handing over authorisation to staff at three different levels. This practice is to enable staff to feel proud and have confidence in the Company. Meanwhile, the Company promoted the work environment for staff achievement by providing opportunities for staff to express their opinions, promoting creative thinking and expressing it. We also promote staff for potential research experiments in innovation and encourage an increase in capability of staff in all levels. We also continuously bring a concept of Happy Workplace to apply to various activities for staff and their families in order to increase and tighten good relationships amongst workers and the Company as well as bring success to the Company based on the smiles of our people.”



**Mr. Nava Chantanasurakon**

Vice President,  
Human Resources and  
Administration Division

## Realise the Happiness of Staff

The concept of 8-facet Happy Workplace that was applied to working relations for the happiness of the staff consisted of:

Facets	Activities / Welfare
<b>Happy Body</b>	<ul style="list-style-type: none"> <li>Provided health assurance (in 2010 the Company increased benefits for staff on the room rates when hospitalised)</li> <li>Provided accident assurance</li> <li>Held a "Staff Health Week" campaign</li> <li>Held six different types of sport activities which were held all year round</li> <li>Held an annual sports day</li> <li>Hosted sport activities together with Sahaviriya Group and external communities</li> <li>Provided educational training for staff on the subjects of drugs and AIDS which were presented by guest instructors</li> </ul>
<b>Happy Money</b>	<ul style="list-style-type: none"> <li>Provided free and fixed priced meal for plant workers</li> <li>Provided providence fund</li> <li>Increased Company's vehicles for staff (expanded the routes from 4 to 6)</li> <li>Provided financial support for staff who work at Bangsaphan Plant</li> <li>Provided financial support for staff who's residence are not a Bangsaphan District</li> <li>Provided financial support for staff who are on duty outside the workplace and abroad</li> <li>Provided overtime payments</li> <li>Provided staff uniform</li> <li>Set up a co-operative for staff saving</li> <li>Set up a funeral fund association for staff (registered in December 2010)</li> </ul>
<b>Happy Family</b>	<ul style="list-style-type: none"> <li>Held activities on Family Day</li> <li>Held vocational promotion activities (vocational training) for staff families (4 jobs)</li> <li>Held activities on Children's Day (for the children of staff)</li> <li>Held a Happy Learning Camp (for the children of staff)</li> <li>Held activities on Mothers Day</li> <li>Held Yiam Ban Sam Sampan (home visits for better relationships) for 120 families</li> <li>Held 9 temple visits with families</li> </ul>
<b>Happy Relax</b>	<ul style="list-style-type: none"> <li>Held club activities</li> <li>Held New Year Party</li> <li>SSI Pa Tour (Take a trip with SSI)</li> <li>Held morning exercises</li> </ul>
<b>Happy Soul</b>	<ul style="list-style-type: none"> <li>Made merits on New Years' Day</li> <li>Made merits and pouring water to the management on Songkran Day</li> <li>Held a wax moulding tradition ceremony on Buddhist Lent Day</li> <li>Made merits on staff's month of birth</li> </ul>
<b>Happy Heart</b>	<ul style="list-style-type: none"> <li>Held voluntary activities between staff and communities</li> <li>Held "friends held friends" activity to help needy staff</li> <li>Donated blood to the provincial Red Cross and Bangsaphan Hospital</li> <li>Donated blood to the Red Cross Society at Chulalongkorn Hospital every three months</li> </ul>
<b>Happy Brain</b>	<ul style="list-style-type: none"> <li>Created a learning corner in the plant compound</li> <li>Set up a "Steel" Library</li> <li>Held "Show and Share" activity</li> <li>Held "Innovation" activity</li> <li>Provided training and knowledge improvement for staff</li> <li>Set up "Knowledge" Library</li> </ul>
<b>Happy Society</b>	<ul style="list-style-type: none"> <li>Held "Face to Face" activities together with various departments to hear problems and suggestions from staff</li> <li>Held "Night Workplace Visits" to meet staff on duty at night and listen to problems and burdens at work</li> </ul>

## Intra-Organization Communication to Understand all Staff

Communication is an important factor establishing a good understanding and relationship between staff and the Company. The Company focused on creating two way communications through various channels, as follows:

Communication Channel	Objective	Outcome 2010
Overview from Managing Director (video clip of interview with MD, publicised through intranet and TV)	To inform and make all staff aware of the policy, the operation direction and major performances of the Company directly from the Managing Director	
Arrange a stage for presentation of job performance and operation plans	To allow all staff at management level to acknowledge and share their opinions on the direction and business operation, both for the Company in overview and for different departments so that they can communicate information to their teams in a clear and accurate manner	4 times 230 participants
Voice on the Line	To provide information to staff directly from management in different lines of work to make them understand the business vision or related operation	Completed 5 times at Bangsaphan
Morning Talk before Operations for the Departments / Working Teams	To allow managers and staff to have a two way communication together every day	Took place in Bangkok, 16 teams (on average every other day)
SSI Loves All Magazine	To distribute news and information about the Company and activities about working relationships, as well as to give recognition and praise to staff who have had good performance or are a role model in various aspects concerning SSI's values	7 issues
Working Relationships - Visit Staff at their Workplace (Face to Face Workface Visit)	Visit staff at their actual operation location to provide information and news about activities being held in the Company as well as asking them for their opinions and suggestions	Every unit in all locations of 17 units - once every quarter
Night Workplace Visit	Visit workers on night shift at actual workplace	8 times
House Visit	To look after workers quality of living and communicate with workers and their families at home	120 families
Shop Steward	To form groups of workers to serve as communication links between the Company and their operational units	Group has met 10 times
E News Bulletin	To inform workers about current and future activities of the Company, as well as living and healthcare information	18 issues
SMS	To alert workers with updated information quickly and continuously	18 times
Internal TV	To distribute major information to all workers quickly	5 times

## Staff Development

The Company proceeded to develop and improve knowledge and skills for staff in all levels through various methods:

Guideline	Method	Outcome in 2010
On the Job Development	Set standards of necessary knowledge and skills to different tasks and assign supervisors to coach and train staff to enable them to perform in accordance to the knowledge and skill levels required, and monitor the outcomes regularly and closely.	123 persons
In House Classroom Training	Core Competency Course Managerial Competency Course Functional Competency Course Management Case Study Course Special Courses	154 courses with 5,412 participants. Average training period 20:35 hours per person per year
Domestic and Overseas Training	Appoint staff to join trainings held by external organizations both domestically and overseas.	252 course with 540 participants. Average training period 9:44 hours per person per year
SSI & WCE Technical Symposium	Create and develop quality of work and to serve as a stage for participants to exchange ideas, techniques, methods and experience as well as to distribute information and progress in knowledge and technology of steel industry to staff.	1 October 2010, 230 staff participants and 18 presentation cases
SSI & WCE Innovation Awards 2010	Create and develop quality of work and innovations, and to serve as a stage for participants to exchange ideas, techniques, methods and experience on engineering to create innovative products.	25 November 2010, 185 participants with 10 presentation cases
Individual Development Plan	Self development for certain skills such as English Language and Information Technology to meet a Company's guideline for skills in different levels / positions with the Company's support.	33 persons
Business Stimulation	Change Action Team (CAT) was a stage that General Managers and managers of different departments could use to form their teams and role play as the management of the Company in order to brainstorm and set up a business development plan and new related systems until they gained the Change Action Plan for the Company.	5 teams, 50 people
Executive Study Tour	Arrange trips for groups of executives to visit the operation and management of other leading organizations in the same industry, or in other industries in order to study their service and use it as a guideline for best practice as well as properly applying it to the business.	2 times, 63 participants
Scholarships for Selected Staff for College Education	Provide scholarship for master degree education for staff in management or upper levels.	2 persons

## Employee Engagement Survey

The Company conducted an Employee Engagement Survey in order to find factors that may encourage staff to better engage with the organization. The survey was also aim at finding a guideline for the Company to improve and develop the positive feeling of staff. The result of the survey in 2010 showed that the Sahaviriya Steel Industries' score was satisfactory with 54 percent outcome.



## Innovation, Research, Development and Distribution

After Sahaviriya Steel Industries Public Company Limited (SSI) announced a new business plan with a vision of “Innovate premium value steel products and services for customer; generate consistent profit and sustainable value for stakeholders”, the Company has moved forwards to improve the capacity of the organization in various dimensions. The aim was to promote the new vision for the Company so that it becomes an innovative organization by developing quality products and services that are well recognized, from international product quality accreditation organizations whilst continuously studying for more research results. The outcome from the research studies have been well accepted and recognized from both local and international academic circles.

### Innovation Creation

In 2010 the Company recognized the importance of creative thinking and that it would be an important mechanism to build strength and prominence to the organization. The Company set up an “innovate • strength” slogan for all departments in the organization to use as their operation guideline in order to efficiently create an innovative system for the Company and achieve the goal of the Company’s three year business plan. The system was also an important factor to move the organization forwards and to become an innovative organization, based upon the “Innovate premium value steel products and services for customer; generate consistent profit and sustainable value for stakeholders” vision. The Company established two working committees; the Innovation Process Working Committee and the Innovate Premium Value Product Working Committee, to pursue tasks regarding innovation in order to ensure that the innovation is being materialized in the organization.

#### The Committee to Create an Innovation System

On 1 April 2010, the Company appointed the Innovation Process Working Committee with responsibilities to move innovation forwards within the organization. Its key roles included:

1. Studied and designed an innovation system
2. Co-ordinated with the management and other organizations involved to review, revise, maintain and develop the system as well as oversee and monitor all activities according to the system and goal.
3. Set up the protocol and criteria to measure efficiency



4. Developed a tool to use in the innovation system
5. Promoted and built good spirit whilst encouraging staff in all departments to realise the importance of innovation
6. Held committee meetings and reported operation updates to the senior management committee

In 2010 the Innovation Process Working Committee designed an Innovation System to be applied in the organization, whilst communicating innovation knowledge to staff at all levels through various communication channels. Those channels included PR posters, newsletters and distribution of examples of innovative products. Another channel was to encourage individual or groups of staff to send their innovative ideas through Innovation Platform IT System. This resulted in 287 innovative ideas. They sent their employees constructive innovative ideas and these ideas were examined, approved and registered by the committee. Most ideas were centred on improvement of production processes, quality and cost reduction due to the production process. It showed that the Company staff were very interested in such a system and were trying to develop new methods to benefit their organization. Their participation led the Company to gain both financial and non financial benefits such as the ability to reduce operation expenses up to 34.6 million baht, increase efficiency of production and operation as well as prevention of dangerous accidents and harmful environments.

#### **Innovate Premium Value Product Working Committee**

To achieve the goal of innovating premium value products and services for customers, the Company appointed a committee called the Innovate Premium Value Product Working Committee which would introduce value added steel products and services for customers and upgrade the Company's products beyond other steel producers. In 2010 the Company could make sales of 56,500 tons for new products worth 1,261 million baht of revenue.

### **Goal Programme and Appraisal System 2.0**

In order to create long term competitiveness, the Company realised that human resource is critical for the

operation of the business. It is impossible for the Company to remain strong in the industry without good quality staff. In 2010 the Company initiated two ideas:

- Goal Program 2.0: This program led to better clarification of objectives, responsibility and authorisation in operation, as well as better satisfaction and increased value of an individual's tasks.
- Appraisal System 2.0: The enabled each staff to maximise their ability in operations. It focused on and cultivated the strength of an individual to overcome their weakness as well as drive innovative ideas for the strength of the Company. The Company asserted an agenda of innovation into a monthly management meeting so that all operational sections could report and update the management on ideas and initiate projects under their responsibility.

### **R&D towards World Class**

The Company intentionally focused on research and established a research unit for such a mission. The Company's research and development department has continuously completed research studies and campaigns for everyone to understand the importance of researches. The department sent those studies for approval from the National Science and Technology Development Agency (NSTDA) each year. From 2006 to 2010 the Company sent 69 study projects worth a total of more than 55.34 million baht for approval. A number of these projects could be proceeded to obtain copyright. SSI has become the first and only Company in the steel production industry that has sent research studies to NSTDA each year. This showed the Company's efforts that they realised the importance of research to develop sustainable knowledge. In 2010 the Company conducted 17 research and development projects (8 product and 9 production process) worth a total of more than 10.81 million baht.

innovate • strength

## SSI Research and Development Projects

### 1. Approved Research Projects

• Product Quality	26	Projects	Worth	24,434,856	Baht
• Process Improvement	26	Projects	Worth	20,091,363	Baht
• Total	52	Projects	Worth	44,526,219	Baht

### 2. Research Projects in 2010

• Product Quality	8	Projects	Worth	5,309,995	Baht
• Process Improvement	9	Projects	Worth	5,505,194	Baht
• Total	17	Projects	Worth	10,815,189	Baht



## Dissemination for the Development of the Country

SSI aimed to promote and upgrade researches in order to gain new knowledges. The Company joined academic conferences and seminars domestically and abroad. It also provided a Metallurgist Award 2010 to Assoc. Prof. Dr. Paritas Phanthunbanyong, Director of Thai-Japanese Technology Promotion Association, and Youth Metallurgist Award 2010 to Dr. Akarat Waiyanit, researcher at the laboratory of corrosion and annihilation analysis and degradation of materials, MTEC's Research Operation on Effectiveness of Material Function Unit.

The results of the Company's research studies which were classed as important and beneficial to the metallurgy circle were selected to be presented at the conference. These research studies included:

- **The 4<sup>th</sup> Thailand Metallurgy Conference**

This conference, hosted by the Technology Suranaree University was held in Thailand on 17 - 19 November 2010. Three research studies from SSI were selected to be presented at the conference, including:

1. A study of "Development of Hot Rolled Low Carbon with Low Boron Mixed Steel Sheets"

2. A study of "Correlation between Chemical Composition as well as Rolling Conditions and Mechanical Properties of Hot Rolled Low Carbon Steels using Statistical Multiple Regression Analysis"

3. A study of "Mechanical Properties at High Temperature of Low Carbon with Low Boron Mixed Steel"

- **Materials Science & Technology 2012 Conference & Exhibition**

The Company's research titled "Normalising Condition-Microstructures-Mechanical Properties Relation of Hot Rolled Steel strip for Gas Cylinder Production" was selected to be presented at the conference and exhibition of science and technology on materials MS&T 2010.

The study was an in depth research study that focused on the result of regular baking over micro structure and mechanical quality of hot-rolled steel sheets for gas tanks. The research was important to the development of the quality of hot-rolled steels for gas tanks to meet high demand and add value to products for gas tank producers. It was also important for further expansion of sustainable development in the gas tank production industry.

The Materials Science & Technology 2010 Conference and Exhibition was one of the top international academic conferences, aimed to spread the results from studies

and development in material engineering technology. The MS&T '10 was held on 17 - 20 October 2010 at Houston, Texas, USA through the co-operation of four leading material organizations. These included the American Ceramic Society (ACerS), the Association for Iron & Steel Technology (AIST), ASM International (ASM) and the Minerals, Metals & Materials Society (TMS). The event served as a stage to display innovative progress in production and material development technology, as well as to promote knowledge and understanding and to exchange information on material technology amongst participants. Most were material experts from universities and leading companies around the world. There were more than 3,000 participants from around the world in the latest conference.

○ **The 8<sup>th</sup> International Conference on Fracture and Strength of Solids**

The 8<sup>th</sup> International Conference on Fracture and Strength of Solids was held in Kuala Lumpur, Malaysia. The Company was accepted by the organizer to present a research study on "Correlation between Chemical Composition as well as Rolling Conditions and Mechanical Properties of Hot-Rolled Low Carbon Steels Using Statistical Multiple Regression Analysis". This research studies the effect of chemical compositions and conditions of rolling on mechanical properties of hot-rolled low carbon steel by using a statistics method. It could be applied to the testing operation of hot-rolled steel sheets. The research was a proof that the work of SSI's research and development was well recognized and credible.

## Innovative Products Received a Quality Certificate from the Classifications Societies

Besides innovation creation, the Company also focused on creating value-added products for customers as well as increasing sales, creating profit for the Company and aiming to become the leader in the market of special quality steel sheets. Such innovative products received accredit

standards from classification societies which are well recognized globally. It showed that SSI had the capability to produce special quality products which could respond to every demand from top local customers and also aimed to expand the foreign market in the future. In 2010 the Company developed quality products and received world class accredits as follows:

- Det Norske Veritas (DNV, Norway), for special quality product category, NV-A and NV-B grades
- Lloyd's Register, England, for special quality product category, LR-A, LR-B, LR-D 360AR and 410AR grades
- Bureau Veritas (BV, France), for special quality product category, BV-A, BV-B and BV-D grades

These standards are other emblems that guaranteed the quality of the products as well as in every step of the production process for special quality steel sheets. They created confidence amongst the customers in chain industries such as ship building, and other related industries such as boiler and pressure vessel and petroleum support base. Those industries need highly strong and clean steel. In other words, the steel must be strictly controlled of inclusion to a very low level whilst every step of the production process must be professionally controlled.

These research and development projects were generated by staff in the Company's research and development department, together with state and private organizations, local academic institutes and the Company's customers. Staff also researched and developed production processes and products. The co-operation was beneficial to staff for developing their capability, and to the Company for achieving a vision of being an innovative organization in the development of high quality products in the high quality steel category, especially for the automobile industry. Moreover, it created knowledge about steel for the general staff in the steel production industry in Thailand. It was a key foundation for the development of the steel industry as it was critical to improve the standards of the industry in the country and make progress so that it could become a leader of the global steel industry.

# Rewards

## Awards of Success, Rewards of Pride

Sahaviriya Steel Industries Public Company Limited (SSI) aimed and intended to operate under full support from the management team and all staff in order to achieve our vision to become the top producer of special quality steel sheets in ASEAN, and to create sustainable revenue to stakeholders. Such intention and effort led SSI to receive several honourable awards from different organizations as follows:

### ► Good Governance

SSI realized that the management under good governance and organization ethics is important. Therefore, the Company sets a clear guideline and adheres to the guideline. The Company received many honorable awards 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 Stock Exchange of Thailand (SET) including:
  - Best Corporate Governance Report Award 2005
  - Distinction in Maintaining Excellent Corporate Award 2006



### ► Management

An intention for continuous development to enhance efficiency in all operations led SSI to become the first Company in Thailand to receive the Prime Minister Award held by Industrial Ministry, including:

- Prime Minister's Industry Award 2003 and other excellent industry awards in various categories
- Prime Minister Award for Excellent Industry from Industry Minister
  - 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 Industry Ministry
- Honorary Award for a successful organization under the project of promotion for energy consumption reduction, transportation category 2010

## ► Improvement of Quality of Life

With the aim to develop the steel industry along with improving the quality of life of staff, society and community whilst being environmentally friendly, SSI managed the organization to become a business operator that gives the best recognition and concern to stakeholders. As a result, the Company has received many awards.

## Safety, Occupational Health and Environment

- Thailand Energy Awards 2009 for excellent management in energy conservation in a controlled plant
- 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 2004 - 2007 (received this award for seven consecutive years)
- Excellent Green Plant Award 2003
- EIA Awards 2001 (Excellent Business Operator that managed and preserved the environment following the measures set in a report on analysis of environmental effect 2001)
- Excellent controlled plant that conserved energy 2000

## Labour Relationships and Welfare Benefits

- Honorary award for excellent workplace for worker relationship and welfare 2010 (received for five consecutive years)
- Award for excellent workplace for worker welfare 2003 - 2007 (received for five consecutive years)
- Award for excellent workplace for worker relationship 2003 - 2007 (received for five consecutive years)
- Award for excellent contributor on recreation 2010

SSI also received certificates and industrial standards that were critical for the operations, as follows:

## ► Industrial Standards

- 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 including:
  - JIS G3101
  - JIS G3106
  - JIS G3131
- 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 (TIS 528)

## ► Other Certificates

- Certificate for Standard Quality Management System ISO/TS 16949:2002
- Certificate for Laboratory Capability TIS 17025-2000
- Certificate for Standard 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

## Business Ethics of the Company

The Company operations are based upon responsibility, integrity and competitiveness with fair treatment and responsibility to stakeholders of all groups equally.

### 1. Shareholders

The Company realises that stakeholders are owners of the Company, and the Company has the responsibility to create additional value for shareholders in the long term. The Company sets a guideline for the committee, the management and the staff as follows:

1. Take responsibility with maximal capability, honesty, carefulness, consideration and fairness to benefit all stakeholders
2. Present performance, financial and other reports correctly, completely and on time
3. Inform all shareholders equally about the future of the Company, both positively and negatively
4. Never seek profit for self or others - interest 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 Companies.

### 2. Customers

The Company understands the importance of customers and that this affects the success of the business. The Company has strong intentions to always seek any method to answer the needs of customers for better efficiency and effectiveness to gain customers' trust as follows:

1. Deliver quality products and services that fit the customers' needs or beyond
2. Communicate politely with customers and provide them with sufficient, updated and correct information about products and services without exaggeration which may cause misunderstanding about quality, quantity or any condition of such products and services



3. Seriously perform in accordance to the conditions agreed with customers. In the case of inability to follow any condition, it is a must to inform the customers as soon as possible to seek a solution together

4. Arrange a system or channel so that customers can complain about quality, quantity and safety of products and services and ensure the Company respond promptly

5. Keep customers' confidence and ensure it is never misused

6. Provide suggestions about methods of use of the Company's products and services

### 3. Business Partners

The Company realises the importance of fair treatment with business partners based upon fair revenue for both sides. The Company always provides facts and accurate reports, held discussions with partners for solutions based upon business relations as well as avoided any circumstances that may cause conflict of interest by following the guidelines:

1. No demanding, taking or paying any profit from customers.

2. If the Company knows any information about demanding, taking or paying any profit indecently or information related to business partners this must be revealed and the problem must be solved by working together in a suitable time.

3. Strictly perform under any conditions according to the agreements. In case of inability to follow any condition, it is a must to quickly inform business partners in advance in order to find a solution together.

### 4. Business Competitors

The Company understands the importance of fair treatment with business competitors by following these guidelines:

1. Never illegally or improperly search for information relating business competitors

2. Never destroy the reputation of business competitors by wrong accusation / defamation

### 5. Staff

Staff are vital to the success of the Company. 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 condition by following these guidelines:

1. Treat staff with respect to their individuality and human dignity

2. Provide fair payments to staff

3. Always keep Health & Safety as a high priority to ensure the safety 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 importance of knowledge and ability of all staff

6. Avoid any unfair actions that may affect job security of staff, or any actions that may threaten or pressure a member of staffs mentality

### 6. Regulators

The Company understands the importance of actions based upon law and business ethics by following the law, rules, regulations and official standards restrictively as well as fully co-operating with those regulators.

### 7. Society and Community

The Company realises the importance of corporate social and community responsibility based on effects of natural resources and the environment. The Company provides support and promotion to various constructive activities for society and the community, protected and restored natural resources as well as supported community development continuously to create sustainable development.



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