



Scope of the Report

The Corporate Social Responsibility Report 2012 of Sahaviriya Steel Industries Public Company Limited (SSI) is the fourth issue that the Company has published to inform shareholders, stakeholders, investors and the public about the entire business management, including the social responsibility dimension of SSI which comprise management for reduction in impacts of climate changes, safety, occupational health and environment, development and participation in social and community responsibility, human resource and rights, innovation, research and development and distribution which will be essential for the future development of the Company.

SSI determines to carry on its tasks, which continuously supporting projects and activities which bring sustainable progress and prosperity to the society and all stakeholders, according to SSI's vision and missions. Due to the expansion of the investment in Iron and Steel Business in England, the report will also cover the outcome of this enterprise in order to reflect the Company business more clearly. Apart from the publication, the report is disseminated at www.ssi-steel.com.

Concept behind Corporate Social Responsibility Activities

Sahaviriya Steel Industries Public Company Limited (SSI) pursues its social responsibility activities according to its vision and 3-year business plan (2011 - 2013) which is “**innovate premium value steel products and services for customers; generate consistent profit and sustainable value for stakeholders**” and thus carrying its social responsibility activities continuously apart from striving for business achievement and retraining good corporate governance in all practices and communication as follows:

innovate • strength
สร้างสรรค์ • ความแข็งแกร่ง

The concept is reflected in its main three missions:

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

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Vision and Mission

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

Values





innovate • strength





SSI...

is two-foldedly committed to create values to the society and community where the Company operates, by moving forward on its business path with full accountability and high potential in management and never-ending innovative discovery, while safeguarding the environment, society and community and to create equitable relationship with all stakeholders, while simultaneously generating strength for sustainable development.





Message from the Group CEO and President



innovate • strength

Dear Stakeholders,

It has been 23 years since the inception of Sahaviriya Steel Industries Public Company Limited or “SSI”, the ASEAN’s largest fully-integrated flat steel producer. The Company has conducted the business on the basis of balance and value creation considering the areas of economy, society and environment for the purpose of sustainable development.

Valuing the importance and expectation of the public and stakeholders to the business organization in supporting the economic system of the country and participating in social responsibility, community development and environmental protection, SSI has communicated its principle of “innovate • strength” and each division in the organization has thus determined its plan, objective and implementation in accordance with such principle leading to sustainable development.

After the acquisition of Iron and Steel Making Business, SSI Group currently own the business in Thailand and overseas. Nevertheless, the implementation of activities for sustainability concerning business operation process as well as social, community and environmental responsibility activities have been pursued concurrently with an attempt to cover additional related aspects.

Operating Performance: Lead to Readiness and Stability

The year 2012 was a vital step of the Company that our fully-integrated Iron and Steelmaking Business or SSI Teesside located in the United Kingdom commenced its blast furnace and steel manufacturing operations and produced the first slab on 18 April 2012. It is a supportive business for SSI’s operations in Thailand. As a consequence, the revenues from sales and services of SSI Group in 2012 reached a record high of Baht 60,604 million or 26% escalation from 2011. Although the Group incurred a net loss of Baht 15,903 million due to the delay of the blast furnace operation commencement, high cost



A handwritten signature in black ink, appearing to be 'Win Viriyaprapaikit', written in a cursive style.

Win Viriyaprapaikit

Group CEO and President

of production during the initial production period and loss from steel price movement, this secured raw material source will lead the Company to readiness and stability for future business growth.

Reduction of Climate Change Impact: For the World as a Better Place to Live

The Company aims to be a change leader in reducing the climate change impact. In 2012, the Company was able to reduce the carbon dioxide emission of 20,977.54 tons CO₂ equivalent (from 2007 which was the year of project initiation to 2012, the accumulated reduction of carbon dioxide emission was 97,861.94 tons CO₂ equivalent) through the implementation of key projects including 1) Greenhouse gas reduction projects, 2) Purchase of 2 additional environmentally-friendly products (all together 11 products) and purchase of 2 additional products under the energy saving project, 3) Activities with external organizations, for example, the Industrial Energy Efficiency (IEE) in cooperation with the United Nations Industrial Development Organization (UNIDO) and the development of master plan for energy utilization management for the steel industry in Thailand in cooperation with the Iron and Steel Institute of Thailand.

Safety: Zero Accident Goal

The Company has an intention to prevent and reduce occupational accidents. The Lost Time Injury Frequency Rate (LTIFR) of the Group in 2012 was 2.55 which was not quite favorable in comparison to the LTIFR of 2.27 in 2011 and 3.23 in 2010.

SSI Bangsaphan has been continually certified the Occupational Health and Safety Management Standards of TIS 18001 and the international standard OHSAS 18001. The statistic of occupational accidents therefore tends to decline.

Furthermore, SSI Bangsaphan plant also assigned the Sahaviriya Group Truck Operation Control Working Committee to supervise the transportation staffs in order to prevent traffic accidents from raw material and product transportation. The average rate of operations not conforming to the transportation rule within the community area decreased to 0.6% in 2012 from 29% in 2010 and 5.5% in 2011. The target of the Company is to reduce the accidents and traffic rule violation to zero. This will be a significant development of the Company towards an entire zero-accident goal.

For the implementation of safety and occupational health of SSI Teesside in the United Kingdom, the Lost Time Injury Frequency Rate (LTIFR) was not yet applicable as the plant just entered the initial period of production. SSI UK has however developed a new system for safety management which will be fully utilized in 2013.

Participation in Social and Community Development: Path to Strength

The Company believes that sustainable development is the key for future progress. Hence, working in close cooperation with every stakeholder, SSI is confident in its ability to develop the society as a whole.

The Company has collaborated with diverse partners in organizing various activities contributing to the society. The 5th Thailand Iron Man Mini Marathon involved more than 1,500 participants and was able to raise Baht 2.5 million funds for 25 foundations to support vulnerable groups. In addition, the Company also held the 4th Sahaviriya Bangkok Triathlon 2012 in cooperation with the Rajpracha Samasai Foundation under the royal patronage where Baht 1.9 million funds were contributed to the foundation to assist the youth who affected from leprosy and AIDS.

As for Bangsaphan area where our plant is located, we provided support to and joined 26 community development projects which benefitted 17,036 people as well as pursued 39 activities of “SSI Arsa” involving 796 employees accounting for 6,368 working hours and 1,278 local inhabitants from the community whose contributions to community development projects accounting to 10,224 working hours. These activities were also highly successful in terms of pursuing the goal of sustainable development concept. Our employees and local people were both the project owners as they worked together from the first step of activity initiation to conceptual planning and implementation.



SSI Teesside in the United Kingdom, however, is exposed to different surroundings from what exists in Thailand as it is during the initial production period. Plans for social responsibility activities will be set and monitored in the near future.

Innovation: Innovate Value for Customers

Our main purpose is to innovate premium value steel products and services for stakeholders. We have therefore supported and encouraged idea initiation in terms of production process, product and service quality improvement, cost reduction or safety enhancement. In 2012, our innovation platform gathered 216 innovative ideas from the employees of which 210 ideas were accepted and registered with the committee. Forty of these ideas are in the experimental stage and 32 ideas have passed the committee's criterion to bring the ideas and suggestions on innovations to the implementation stage with the necessary funding and resources provided by the Company.

Considering the product distribution, the Company produced and delivered the Innovated Value Products to customers in the amount of 308,450 tons accounting for 14% of the total sales volume. In 2011, the Company produced and delivered these value products to customers in the amount of 169,633 tons or 11% of the total sales volume, up 82%.

Personnel: Link to Success

As at 31 December 2012, SSI Group had 4,090 employees. In pursuing the policy to employ people in the local community, therefore, out of 2,076 employees of SSI Group at SSI Bangsaphan, 1,546 people or 74.4% are the people residing in the area of Prachuap Khiri Khan. Moreover, SSI Teesside had 1,758 employees of which 97.78% were local inhabitants of the Teesside community.

Since 2012 SSI UK has been during the initial period of production, the operating system for employees and the inter-cultural relations of the two countries has not yet been considered in details. The Company plans to start reconciling these aspects in 2013. I believe that this will open a significant opportunity for our Group and our staffs to acquire cultural and knowledge exchange, which professionally collaborating for results that will bring about great benefits to both sides.

The Company has continued to drive the utilization of the Goal Program 2.0 and the Appraisal System 2.0 together with the constant creation of innovations and personnel development. The average training hour per person was 29.32 hours. Employee happiness is reflected in the 8 Dimension Happy Workplace program. The activity resulted in increasing employee engagement rate to 58%.

In 2012, the Company received the National Outstanding Labor Welfare/Relations Award for 10 consecutive years and the Thailand Outstanding Company Award for National Safety, Occupational Health and Working Environment 2012.

The Company anticipates that our faith in the vision "innovate premium value steel products and services for customers; generate consistent profit and sustainable value for stakeholders" and the consequence from the development under the principle "innovate • strength" will enhance the society, the economy and the environment from the mini scale community level to the macro level of the whole society.

For all from our generation and those of the new generation who own the future.



Corporate Social Responsibility Activities Overview 2012

Revenues from sales and services

Unit: Baht million

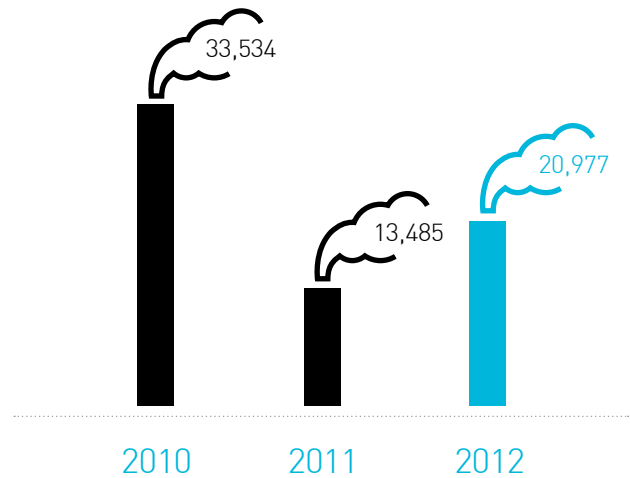
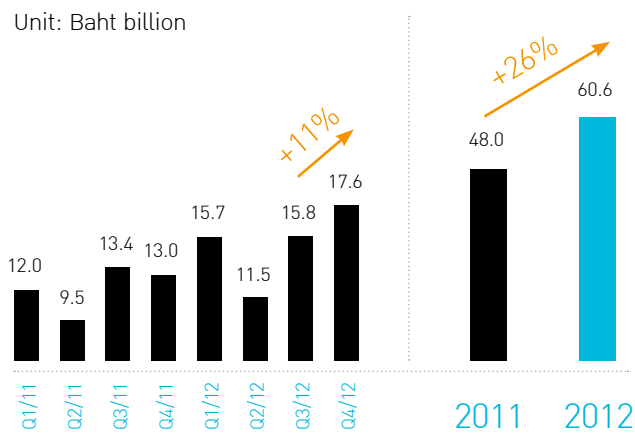
60,604

Carbon dioxide emission 2007 - 2012

Unit: Tons CO₂ equivalent

97,861.94

Unit: Baht billion



The revenue from sales and services of SSI Group reached a record high

- The revenue from sales and services of SSI Group in 2012 reached a record high of Baht 60,604 million or 26% escalation from 2011.
- The Group incurred a net loss of Baht 15,903 million.

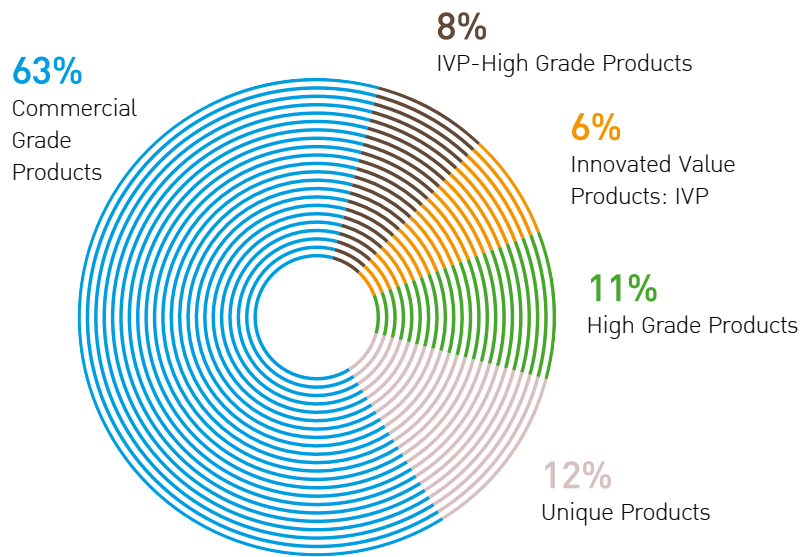
Carbon dioxide emission during 2007 - 2012

- SSI could reduce the carbon dioxide emission of 20,977.54 tons CO₂ equivalent (from 2007 which was the year of project initiation to 2012, the accumulated reduction of carbon dioxide emission was 97,861.94 tons CO₂ equivalent).

802,366 tons
or
37%

Sales of Premium Value Products: PVP

Unit: %



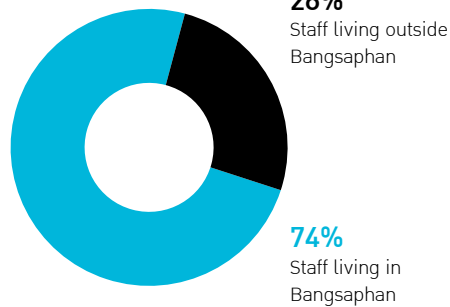
Development and innovation of products

- High grade Steel for automotive industry with the requirement of Tensile at least 270 and 440 Mpa
- SuperFlat HRC with thickness lower than 2.0 mm
- Innovated Value Products (IVP) according to specific need of customers (You+)
- Production process which provide effective distribution within 15 days after receiving an order (Speed+)

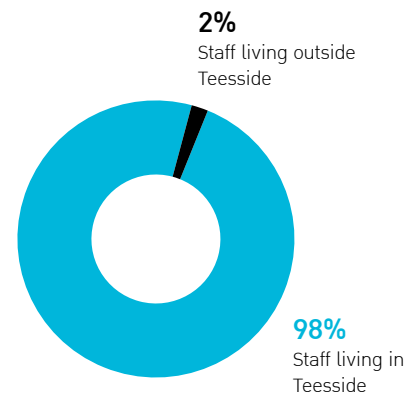
Ratio of local people hiring

Unit: %

**SSI
Bangsaphan**



**SSI
Teesside**



Development and participation in social and community responsibility

- The 5th Thailand Iron Man Mini Marathon 2012 managed to raise Baht 2.5 million from 25 charities.
- Sahaviriya Bangkok Triathlon gained Baht 1.9 million to support children affected by leprosy and HIV.
- 26 Bangsaphan community development projects were beneficial to 17,036 people.
- There were 39 activities of "SSI Arsa" (major activities) and activities under the project "A hundred goodness, A thousand hearts of SSI Arsa" (minor activities):
 - The total number of staff members involved was 796 and contributed 6,368 working hours
 - The total number of volunteers from the community was 1,278 and contributed 10,224 working hours.
- SSI Arsa network has expanded to stakeholders such as local media, youths in Bangsaphan and local conservationist network.

Rewards of pride

- National Outstanding Industrial Establishment Award in Labour Welfare/Relations 2012 (10 consecutive years)
- Outstanding Award for Safety, Occupational Health and Work Environment 2012
- Honourable certificate for Excellent Cooperative Governance 2012



Corporate Information

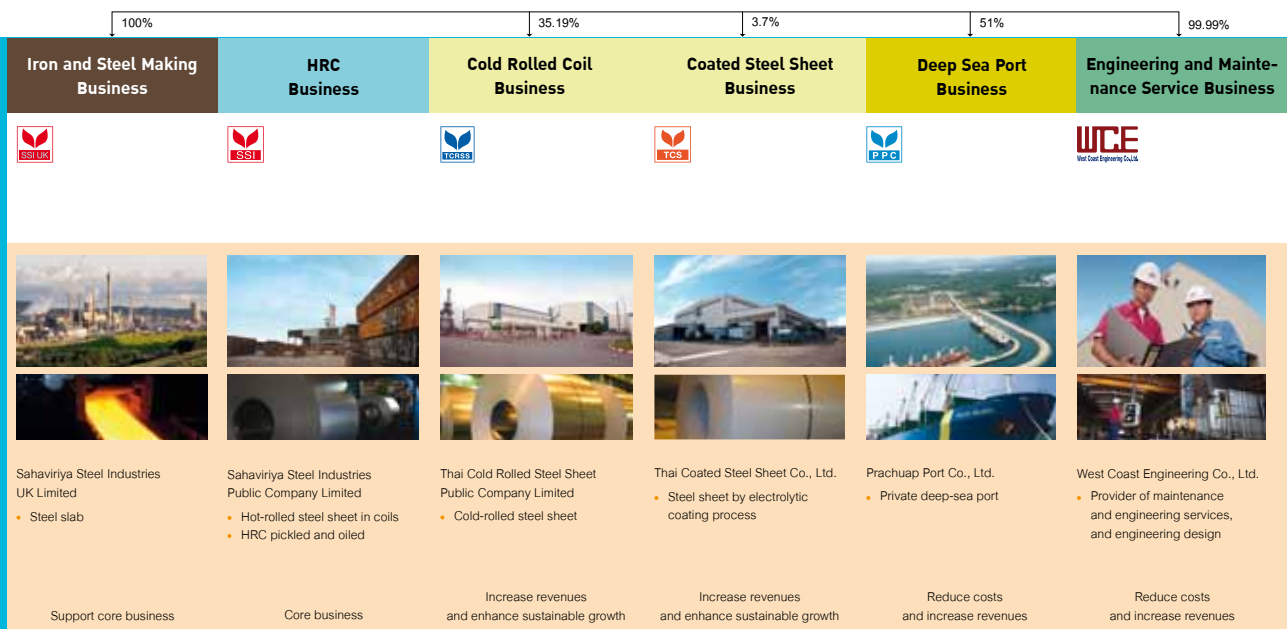
Sahaviriya Steel Industries Public Company Limited or SSI is the ASEAN's largest fully-integrated flat steel producer with 4 million tons annual capacity of hot rolled steel sheet in coils (HRC). SSI endeavors to supply premium-grade steel sheets to cater for the region's growing demand in various sectors such as automobile, energy, transportation and construction sectors. In the upstream side, SSI has acquired SSI Teesside, a 3.6 million tons per annum fully-integrated iron-steel making plant located in Redcar in the northeast of UK, through a wholly-owned subsidiary Sahaviriya Steel Industries UK Limited ("SSI UK"). SSI Teesside supplies premium-grade steel slabs to feed the growing demands from SSI, as well as other rolling mills around the world. In the downstream side, SSI has investments in joint-venture downstream plants: Thai Cold Rolled Steel Sheet Public Company Limited ("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, a site efficiently integrated with a privately-owned deep-sea port (Prachuap Port Co., Ltd., or PPC), which allows import of raw materials and export of finished products in large economy of scale. SSI extends its engineering capabilities into its fully-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."

For more information, please visit www.ssi-steel.com

SSI Group Structure

Last updated on 27 February 2013





Business Overview and Economic Performance

In 2012, the global steel industry expanded slightly in terms of both global crude steel production and global apparent steel use due to the economic crisis in different regions of the world in which the impact continued to the fourth quarter of 2012. For the domestic steel market, the domestic consumption remained strong with the apparent steel supply reaching a record high at 16.6 million tons as a result of the industry recovery after being affected by the flood in Thailand late in 2011 and the consumption-stimulus measures imposed by the government. Although the domestic hot rolled steel industry was affected by market dumping from imported hot rolled steel sheet in coils (HRC), import of HRC with materials added and market dumping of cold rolled steel sheet, the Company was able to increase the volume of HRC delivery to 2.18 million tons or 39% escalation from 2011. Furthermore, production commencement of the blast furnace plant in the United Kingdom with 1.68 million tons slab sales volume caused the sales and service revenues of the Company and its subsidiaries grow to Baht 60,604 million achieving a record high. However, due to (1) the delay of production commencement of the blast furnace business, (2) the high cost of production of the blast furnace business from non-optimal level of production, and (3) the impact of the world steel price decline, the Company and its subsidiaries incurred net loss of Baht 15,903 million or Baht 0.83 per share in 2012.

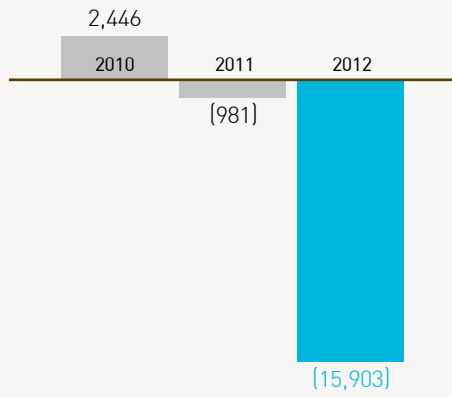
As for the marketing aspect, the Company continued its emphasis on innovation and distribution of premium value products, which had a high profit margin, in order to reduce the risk from price and sales volume volatility of other general quality products. In 2012, the premium value products contributed 0.80 million tons sales volume representing 37% of the total sales volume. In addition, the Company has also continually pursued the project of innovated value product creation where the sales and delivery volume of 0.31 million tons were achieved.

For the implementation of key projects, in the second quarter of 2012, the engineering project to improve the blast furnace plant of SSI UK for slab production was completed and the plant already commenced its operations. At present, the plant is in the process of increasing the production capacity and constructing the Pulverised Coal Injection Unit (PCI) which is a highly important project for the purpose of production cost reduction, efficiency enhancement and improvement of competitiveness in production cost of the blast furnace plant. The unit is expected to commence its operations in the second quarter of 2013. After such project completion, the Company will be more capable in terms of strength and stability in long term competitiveness as a result of secured source of slab material enabling the Company to achieve its 2 main strategies of “innovation of premium value steel products and services” and “world class business development”.

The Company was able to increase the volume of HRC delivery to 2.18 million tons or 39% escalation from 2011. Furthermore, production commencement of the blast furnace plant in the United Kingdom with 1.68 million tons slab sales volume caused the sales and service revenues of the Company and its subsidiaries grow to Baht 60,604 million achieving a record high.

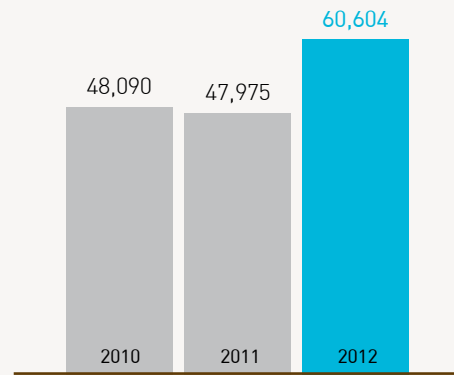
Net profit (loss)

Unit: Baht million



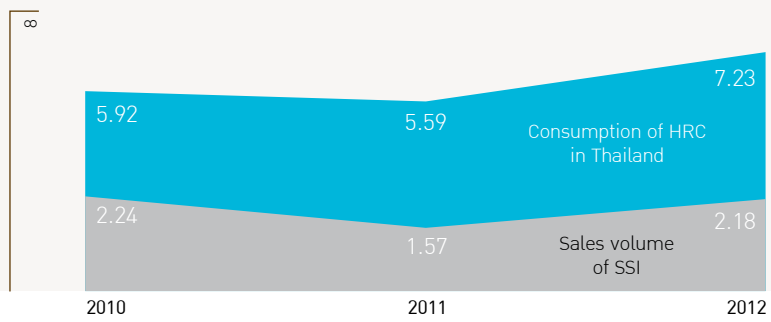
Revenue from sales and services

Unit: Baht million



Consumption of HRC in Thailand Compared with Sales volume of SSI

Unit: Baht million





Social Responsibility Dimension of SSI

Management for Reduction in Impacts of Climate Change

With the commitment to our vision “Innovate premium value steel products and services for customers; generate consistent profit and sustainable value for stakeholders” and realization of the significance of problems related to the climate change, SSI as the largest fully-integrated flat steel producer and the first global steel company from ASEAN, has carried out activities as follows:

Outcome of the Climate Change Committee

SSI Climate Change Committee has carried out activities concerning energy conservation, waste management, together with informing staff members and the public about the related impacts and its reduction methods and co-operation with offices concerned. Besides, SSI has introduced the Life-Cycle of Product-Assessment into environmental activities in order to continuously reduce the impacts and improve environmental activities, responding to the Company’s policy on participation in social and environmental development and corporate social responsibility. From the inception of the project in 2002 to 2012, SSI reduced 97,861.94 tons of carbon dioxide emission. As for 2012 alone, the amount was at 20,977.54 tons of CO₂ emission.

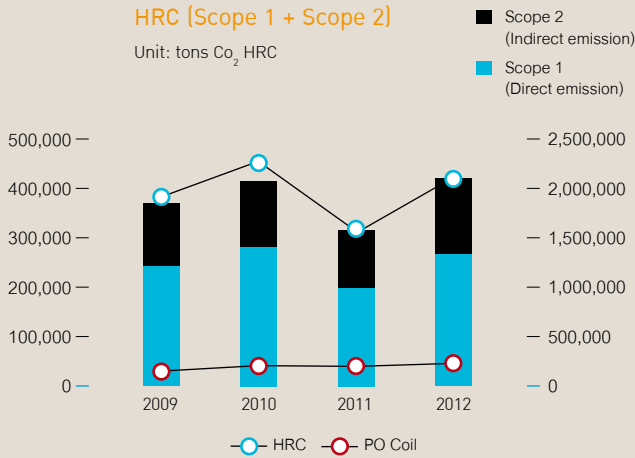


In 2012 SSI set the target and action plans to follow up and measure the reduced amount of greenhouse gas release through global warming reduction projects, comprising new products which stress energy conservation and waste-reduction in production processes, improved production processes to reduce production time and opportunity losses, as well as, electrical energy losses related, improved-efficiency and energy-conserved activities in storage and transportation of raw material and products, machinery maintenance activities which focus on reducing materials and waste, improved building-maintenance activities which conserve electrical energy and resource, other energy-conserved activities with the use of technology, purchasing of eco-friendly products and services, 3R activities which emphasize waste-reduction in production processes, Green networks in the Company, community-participation activities which focus on natural and environmental conservation such as Youth Conservation Camp, Waste Bank project for schools, SSI Beach Clean-Up and Bangsaphan Car Free Day.

From 2012 activities, the Company could reduce CO₂ emission per production tons in comparison with 2009 percentage, by 1.49% per ton HRC (formerly 2.9 kg CO₂ per ton HRC) and by 41.07% per PO Coil (formerly 12.9 kg CO₂ per ton PO Coil).

HRC (Scope 1 + Scope 2)

Unit: tons CO₂ HRC



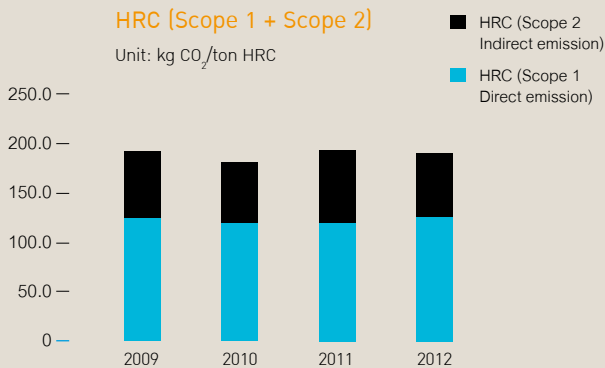
Remark:

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 2012 a tendency of green house gas emission decreased following lower production volume.

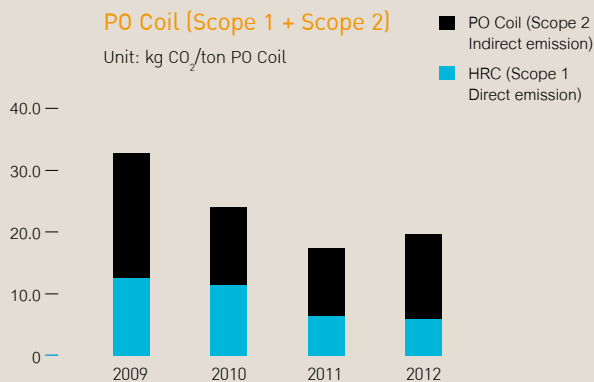
HRC (Scope 1 + Scope 2)

Unit: kg CO₂/ton HRC



PO Coil (Scope 1 + Scope 2)

Unit: kg CO₂/ton PO Coil



Management of Ozone Depleting Substances

SSI has carried out a project to change R-22 cooling substance in the air-conditioners to BPX4400 cooling substance which does not harm ozone layers. Evidences show that 10% of electrical energy can be saved and 126.67 kg of new R-22 substance can be reduced or 229.27 tons of CO₂ emission of greenhouse gas reduction. The maintenance of air-conditioners is cleanly carried out by the use of R-22 retention, instead of drainage into the atmosphere, and re-use. In 2012, the amount of 605 kg of R-22 can be collected and re-used, i.e. the equivalent of 1,095.05 tons of CO₂ emission reduction of greenhouse gas. In the future, SSI plans to use BPX4400 or unarm substance in the entire plant.

Eco-Friendly Purchasing

In 2012, SSI has continuously purchased eco-friendly products for the 9 product groups, according to the regulations of the Thai Environment Institute, including for the 2 additional projects for the purchase of products under the energy-saving policy. In 2013, SSI aims to purchase 20 more eco-friendly products and support at least 2 projects from energy-saving service providers.



Protection of Community Biodiversity

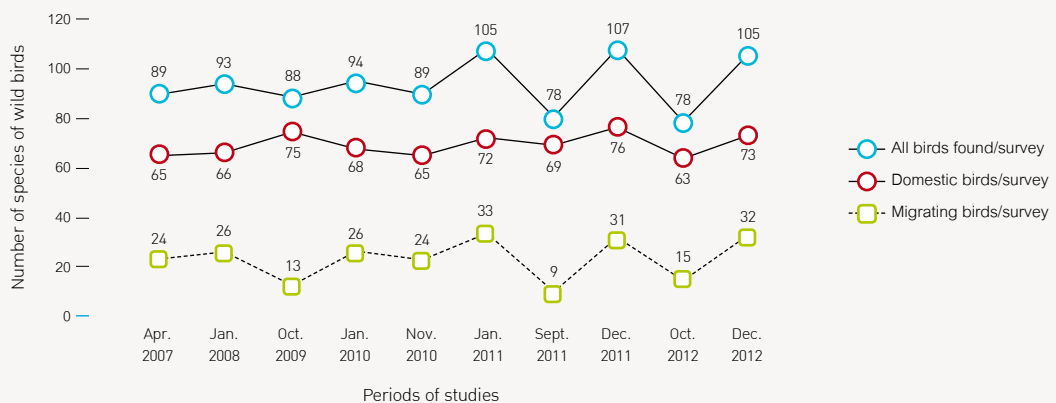
SSI in co-operation with the Environmental Management and Promotion Center of Sahaviriya Group have carried out projects on the biodiversity which is the key indicator of the fertility of various ecosystem in the surrounding areas of SSI Bangsaphan plant as follows:

The Monitoring Project of the Impacts on Biological Resources: With the commitment in eco-friendly industry, SSI, the Environmental Management and Promotion Center of Sahaviriya Group and zoologist experts from Kasetsart University have made a study on possible impacts on the wildlife in the surrounding areas such as Mae Ramphueng National Park. In the latest report of 2012, various species of birds formerly undiscovered and found; increasing from 89 species in 2007 to 105 species in 2012, showing a trend in terms of both species and numbers in the surrounding areas of the Sahaviriya projects. Such data points out that the steel industry is eco-friendly. In particular, SSI and Sahaviriya Group’s continuous standardized measures affected the wildlife in the nearby natural surrounding and can further sustainably protect and renew the existing biodiversity and the community.

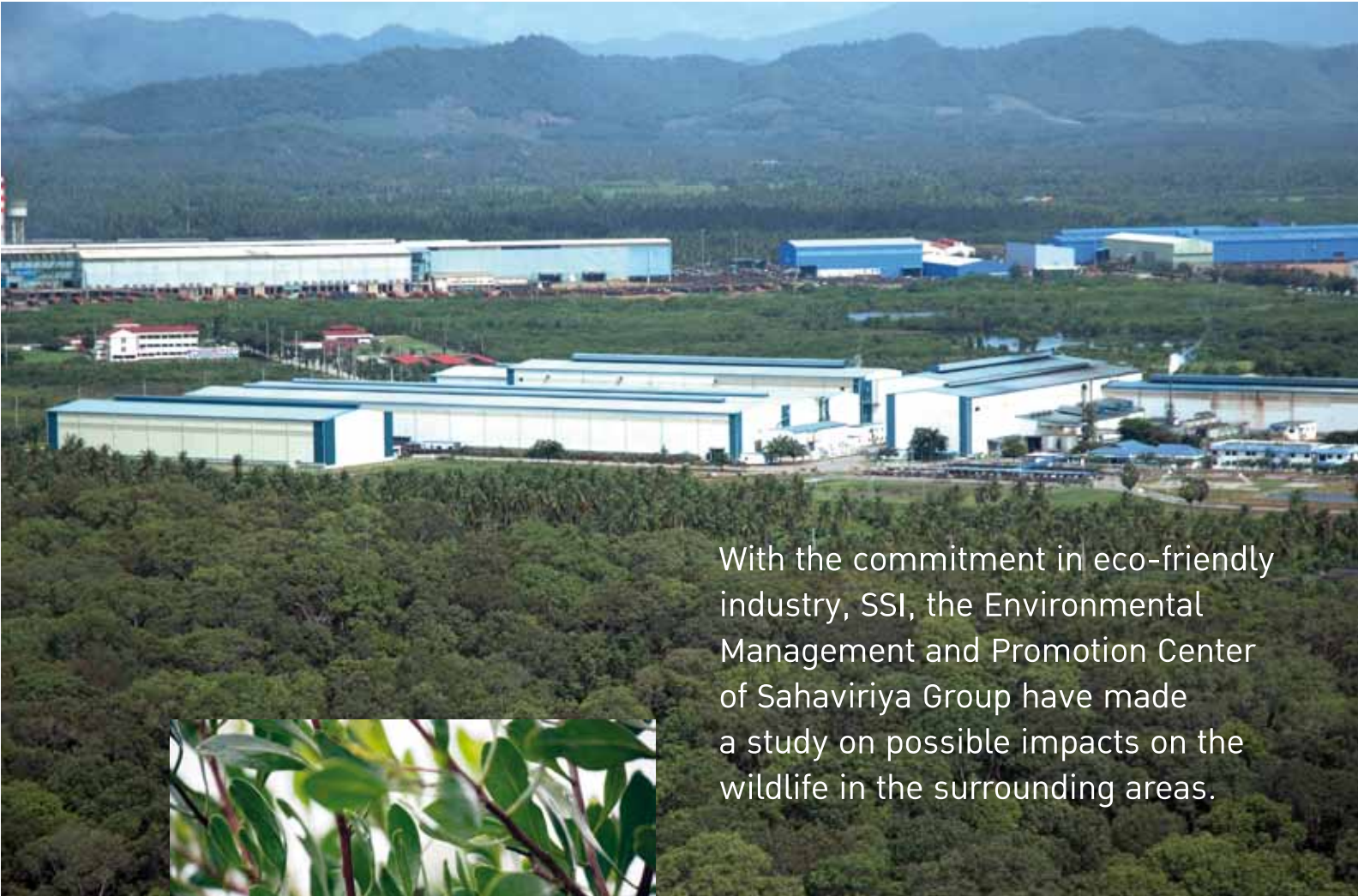
The Conservation and Development of Pa Klang Aow and Mae Ramphueng National Parks: This conservation project has since 2003 continued to develop national pathways, mangrove eco-system and areas for conservation activities as well as natural tourism for Bangsaphan district. On 8 August 2012, SSI, Sahaviriya Group and its Environmental Management and Promotion Center and the Community Network for Conservation and Quality of Life of Bangsaphan organized the “National Pathways in honor of Her Majesty the Queen,” aiming at the pathways so as to render the areas suitable as a natural learning place and a tourist site for the youth in Bangsaphan and the public.

Search the Stone Beach by Mahingsa Discovery Group: Bio-diversity surveying activities, supported by SSI, Sahaviriya Group and Mahingsa Discovery Group from Ban Tha Kham School, cover the wildlife on the stone beaches in Aow Thien, the adjacent areas to the Prachuap Port Co., Ltd. The bio-diversity data gathered serves as an environmental indicator as the stone beach environment rapidly changes, causing impacts to water habitat of wildlife. The areas constantly have cargo transportation, which may cause impacts to the quality of environment and wildlife in the stone beach eco-system. The Mahingsa Discovery

Graph showed species of wild birds found in Bangsaphan district at different periods of time



Various species of wild birds found in the surrounding areas of Sahaviriya Group Project in Bangsaphan.



With the commitment in eco-friendly industry, SSI, the Environmental Management and Promotion Center of Sahaviriya Group have made a study on possible impacts on the wildlife in the surrounding areas.



Team found more than 180 species of wildlife, including sea anemones, seashells, sea cucumbers, hermit crabs and sea sand goby. This points out to the quality of the environment to the fertility of the areas and shows that the

port transportation did not damage the environment on the eco-system. Nonetheless, the data will serve as the basic main information in safeguarding the port transportation's environmental quality and future expansion.

Co-operation with External Organization

SSI has in 2012 volunteered to participate in projects and activities with governmental offices and external institutes namely:

- Training and Advisory Project on the Energy Management System (ISO 50001), continuing from 2011, in co-operation with Thai Industrial Standards Institute (ITSI)
- Study visits on energy conservation in the steel industry of Germany (25 - 30 June 2012), in co-operation with German International Cooperation (GIZ)
- Training on preparatory practices for industrial implementation for greenhouse gas control measures in co-operation with the Ministry of Industry (4 - 11 July 2012)
- Project on Industrial Energy Efficiency (IEE), in co-operation with United Nations Industrial Development Organization (UNIDO) (July - November 2012)
- Project on promoting materials and tools to conserve energy, in co-operation with Department of Alternative Energy Development and Efficiency, Ministry of Energy (14 September 2012 - 2013)

- Participating in the seminar on new approaches on CSR activities on “Carbon replacement to reduce greenhouse-gas release,” in co-operation with Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) (17 August 2012 and 17 September 2012)

- Project to draft the master plan to manage energy in the steel industry in Thailand, in co-operation with the Iron and Steel Institute of Thailand (September 2011 - November 2012).

The main future plan is to introduce the certification of the energy management system ISO 50001:2011, which comprises making the inventory of greenhouse gas release via carbon footprints to estimate the amount of the annual release, analyzing, planning and monitoring projects to reduce or control the major source of greenhouse gas release. Thus, the Company will be helped in effectively controlling and using energy as well as reducing the greenhouse gas release from unnecessary energy.



Safety, Occupational Health and Environment

SSI is committed to the social environmental responsibility in operating business, while applying and connecting through the supply chain in setting goals and plans to cover all aspects of safety and occupational health of staff and contractors, environmental managements at both local and regional levels, together with accepting suggestions, opinions and co-operating with the community concerned, to be detailed as follows:

Safety and Occupational Health Management

SSI demonstrates the commitment to the safety and occupational health management by ensuring that SSI Bangsaphan plant has been certified by Thailand's Safety and Occupational Management System (TIS 18001 and the internationally-recognized OHSAS 18001). SSI also sets up the committee for safety, occupational health and environment in the workplace to maintain and advice on safety improvement in all areas of the workplace. The

committee comprises a working group, safety personal and all staff members, supported by the management team, with the main task to prevent and reduce accidents at work by means of finding and appropriately preventing risks, resulting in the reduced occupational accidental rate.

As for the Safety, Occupational Health and Environmental Management of SSI Teesside in the United Kingdom, the standard is excellent, although, the Loss Time Injury Frequency Rate (LTIFR) does not have a good standard. Since the beginning of SSI UK operation, the Company had meetings with Control of Major Accident Hazards (COMAH). The department agreed with our production plan and employees trainings. Therefore, it approved the operation of the plant. At present, SSI UK sets a new system of safety management which will be applied within 2013.

In brief, the rate of Loss Time Injury Frequency Rate (LTIFR) of 2012 of SSI Group stands at 2.55, in comparison with 2.03 in 2011 and 2.27 in 2010.

Loss Time Injury Frequency Rate (LTIFR) of SSI Group

Name of Companies	2008	2009	2010	2011	2012
Sahaviriya Steel Industries Plc.	0.6	3.37	3.23	2.14	0.35
Thai Cold Rolled Steel Sheet Plc.	0	0	0	0.53	0.56
West Coast Engineering Co., Ltd.	3.12	1.76	3.73	4.17	1.16
Prachuap Port Co., Ltd.	0	0	0	0	0
Sahaviriya Steel Industries UK Limited				1.66	4.8
SSI Group	1.11	1.58	2.27	2.03	2.55



General and Occupational Health Care for Staff

Staff members, besides forming the most vital resource of the organization, can be considered major stakeholders in the Company's operation. General and occupational health management of the staff cannot therefore be overlooked. This entails a survey and risk evaluation on the occupational risks of all staff members, beginning in 2007 and annually revised and re-evaluated. The data gathered serves to set projects on quality environment at work, including projects on reducing dust and smoke in the plant, improving lighting

at work and airflow in HRC and Hot Strip Mills plant. Since 2011, the "Happy Work Place" project has been initiated and continued thoroughly. For instance, for a short-term outcome, inlet airflow is added from below, while for a long-term one, added roof airflow are considered to be implemented in 2013, as already tested in certain pasts. Staff members are encouraged to participate in making suggestion for improvement in their own tasks, which in turn rendering the environmental sustainable development

and the staff themselves happier in the good working atmosphere, with less stress and fewer work-related complaints.

Such data also serves to set up the health check-up program for staff members according to their work risk assessment and in particular to safeguard health changes of those exposed to work hazards, exam though the Company has ensured that all risks are minimized to attain the above-average standard. As for general health, indoor and outdoor exercise areas are arranged together with resting areas for breaks. Moreover, partner organizations jointly arrange recreational and health promotion activities such as sports namely football, futsal, volleyball, Thai ball game, petanque and aerobics together with healthy male and female competition and health promotion publication.

As for the staff members exposed to certain risks and under safeguarding, their health check-up reports are further investigated and if any abnormal factors detected, medical advices in the areas are sought to arrange long-term health plan from 2013 onwards.



Safety and Occupational Health Care Training

Training on safety and occupational health is considered vital to accident prevention and work-related injuries. The Company is therefore committed to inform staff members at all levels about danger at work, together with means and processes to follow in order to prevent danger and injuries, sudden on contamination which implies helping reducing losses and accidental safe of the Company. In 2012, there are 57 courses to train for such purposes which focus on the 2011 Safety, Occupational Health and Environment Act, vary from the basic information level, the skill-implemented level and the specialists' level. Staff members are continuously encouraged to be trained according to the nature of their tasks. In 2012, annual safety training amounts to 15 hours per person.

Preparation for Emergency

The Company considers it important to prepare for possible emergency and hazards at work by setting up the fire prevention and emergency control subcommittee, with the mission to form the policy and plan, based on the environment and related factors at present and in the future, to serve as guidelines for the action plan, preventive measures and preparation to respond to possible crises. The main objective is to reduce losses and render the organization recover to the natural state as soon as possible. The subcommittee also set up implementation measure to control crises, action plans for all types of crises in co-operation with the local plant, set up plans to reduce crises effect on man, the community, environment and property, plans to restore business from stagnation, plans to analyse data and communicate information to prevent arising impacts caused by lack of correct and up-to-date public information, which consequently may harm the image of the organization. Mock situations of various crises

are used for internal practices, jointly participated by local governmental offices and the private sectors namely the District Administration Organization, the municipality, hospitals, polices and nearby enterprises. In case of serious crises beyond the Company's capacity, the committee serve, in junction with the Safety and Environmental Office, as a main body in training for fire hazards crisis, chemical substance hazard, evacuation, help for the injured, response to LPG leaking crises, response to flood, response to continuous environmental crises, which revising and updating the existing plan. In 2012, there are crises-response practices, covering 10 situations and 8 risky plant areas.

Safety Management of Raw Materials and Products Transportation

SSI has continuously paid attention to transport-safety. A working committee to oversee transportation operations of Sahaviriya Group was set up to control transport workers in preventing road accidents while delivering raw materials and products as well as to reassure the safety of staff members and the public at large. Control measure cover allowing only holders of appropriate driving license attend trainings, making sure that drivers follow safety rules of the Sahaviriya Group and carrying out rigid examinations. Besides transportation plans are scheduled to avoid such hours and heavily crowded living areas, which in turn reduce greenhouse gas caused by traffic jam and related accidents. A monthly meeting is held to follow-up plans and solves these problems.

In 2012, SSI joined stakeholders in directing and evaluating the working group, composed of the three parts namely the community leaders, government officials and the Sahaviriya management. They have gathered suggestions and complaints on transportation for improvement. CCTV is also used for monitoring in main area of the community

and protects on rules and regulations and campaigns for safety for drivers, which training for drivers and seminars for transport entrepreneurs and held to inform about the policy and guidelines for road safety. Consequently, average rate of undisciplined conduct has reduced from 29% in 2010 to 5.5% 2011 and 0.6% in 2012 and the community is more satisfied with the outcome.

Moreover, the working group have promoted road safety through projects such as the smile-giving steel car project, entrepreneur seminars, foundation for Sahaviriya Group transport workers, throughout time schedule management, more CCTV and warning posters, together with extended safeguarding of traffic rules-abiding of other vehicles in the country.

Environmental Management

SSI has been continuously certified in the ISO 14001 system since 1999. The main task lies with the safety and environment office which work in co-operation with other production units with plant staff in charge of the management of pollution, water, air and waste system to meet appropriate level, as required by the law.

Outside the plant, SSI operates in conjunction with Sahaviriya Group in Bangsaphan district. The Environmental Management and Promotion Center of Sahaviriya Group are also in charge of community activities to promote environment awareness and co-operation throughout the year.

Resource Management in the Production Process

Raw Materials and Products

SSI imports main raw materials that are steel slabs from several sources with quality control regarding the standards and customer demand. In 2012, the Company targeted raw material waste in production process at not

more than 2.00%. The result from the operation showed that the waste was kept slightly higher than our target, 2.03%. In 2011, SSI produced 2.12 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% sulfur mixed fuel oil that is available locally while electricity is bought from Regional Electricity Authority. In 2012, 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)	364.10	LPG 36.89 kcal/kg PO Coil
Electricity (kwh/ton)	103.84	21.54

Water Management

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

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

Over the past year SSI has been controlling water consumption in production process. The water consumption rate in hot-rolled steel sheet production process was 0.52 cubic meter per ton of production, which was slightly higher than the rate in 2011 (0.69 cubic meter per ton) due to not much productivity causing the machine to run under-capacity. Meanwhile, the water consumption of hot-rolled steel pickled and oiled sheet production process was 0.33 cubic meter per ton of production; that showed a better tendency compared to that rate in 2011 when the consumption rate was 0.23 cubic meter per ton of production.

Chemical Consumption

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

Pollution Control

Waste water quality and quality of related water source

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

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

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

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

4. Cooperate with Environmental Management and Promotion Center (EMPC) under Sahaviriya Group in an examination of sea water quality at the pier of Prachuab Pier Company. Based upon an examination of 24-index in September 2012, the results fell into the range of standard in all items.

Besides the examinations by external organizations authorized by Industrial Works Department, SSI and

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

The result of air quality, released from the plant's chimneys and the ambient air around the worksite, is better than standards at all stations.

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

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

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

The quality has been occasionally monitored and examined in various parameters related to the plant throughout the year. In 2012, the measurement of air quality at 5 stations, including Ban Tha Kham, Ban Tha Manao, Ban Klang Aow, Ban Thabmon and Ban Bo Thonglang relied on various parameters as follows:

1. 1-hr average value of sulfur dioxide (SO₂)(mg/m³)
2. 1-hr average value of oxide of nitrogen (No_x) (mg/m³)
3. 1-hr average value of total suspended particulates (TSP)(mg/m³)
4. 1-hr average value of hydrogen chloride (HCl) (mg/m³)
5. 1-hr average value of particulates matter < 10 microns (PM-10)(mg/m³)

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

Moreover, SSI cooperating with Environmental Management and Promotion Center (EMPC) under Sahaviriya Group held an educational project on an examination of rain water quality for community to help monitor acidic rain. The result showed the rain acidic-alkaline property between 7.5 - 8.0 that referred to no tendency of acidic rain in this area. The criteria figure was under 5.6, indicating high tendency of acidic rain. This activity was seen as co-operation with the community to help them gain knowledge and understanding so they would have more confidence in the quality of rain in Bangsaphan district.

Waste Management

SSI focused on reducing quantity of waste at its origin through several projects. Those included targeting for raw material loss in production at not more than 2.0% and later achieving slightly lower target, at 2.03%. A project for humidity reduction in sediment from wastewater treatment system at under 15% achieved its goal. Other projects included a project for paper waste reduction from the office by campaigning for two-sided paper use and a project to separate plastic and glass bottles from other trashes to resell later. Besides other projects which help reduce waste from the plant were a project of organic fertilizer from dead leaves or plants in the plants, a project to produce biomass fertilizer from food scraps, and a contest on creation from leftover items.

In 2012, SSI totally produced 54,915.35 tons of industrial waste. Out of that waste, 98.94% were eliminated by recycling process while 0.68% was sent to secure landfill and 0.38% was burned. The Company spent Baht 11.58 million on waste management.



Operation Following Laws, Rules and Regulations

SSI is abided to operate by following laws, rules and regulations especially those related to environmental management. Those are, for example, provision of performance reports following the measurement for reduction of the effects on environmental quality, request a permit for industrial waste disposal, provision of result reports from pollution control system, result reports from analysis of fuel oil quality and reports on quantity of scale and etc. SSI completely achieved those on time. In 2012, SSI never violated any environment-related laws or regulations and received no legal order to halt or stop operation as well as no fine for any legal violation.

Green Industry Project

As SSI is committed to operate the steel industry to peacefully co-exist with the community, society and environment, the Company decides to sign a memorandum of understanding on the Green Industry Development with the Ministry of Industry. Under this project, SSI has been assessed in the third level of the Green System of the industry which implies the enterprise that has a systematic environmental management, together with regular

monitoring and revising for further development, lasting for 3 years (24 August 2011 - 23 August 2014). In 2012, the Company still thus remained certified.

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

A survey on attitudes of the community has been conducted annually among the communities around the plant. The communities are important stakeholders of SSI because the operation of the plant affects them economically, socially and environmentally in both positive and negative ways. Thus, an attitude survey enabled SSI to understand their perception through community leaders and household leaders on various effects from the operation of the plant over the year. Thus, cooperation in thinking and decision making between the plant and the community took place through participation process at community council and village meetings, for example. Later, the conclusions from the meetings led SSI to properly hold projects in response to needs and perceptions of the community that could sustainably accommodate the community's satisfaction.

Surveys on the community's attitude in 2012 showed that most people are aware of the plant's benefits in

Subdistrict	Community	Household	Number of Samples	
			From Calculation	From Actual Study
Kamnerd Noppakhun	Kamnerd Noppakhun Subdistrict Municipal	1,441	120	120
Mae Ramphueng	Moo 2 Ban Tha Manao	559	47	47
	Moo 3 Ban Aow Yang	181	15	15
	Moo 4 Ban Tha Kham	372	31	31
	Moo 5 Klang Aow	540	45	45
	Moo 6 Ban Klang Na	629	53	53
	Moo 7 Ban Thung Lan Khwai	120	10	10
	Moo 8 Ban Lang	553	46	46
Total		4,395	367	367

raising the household infrastructure, trade and income and supporting their local activities such as giving donations on equipments for schools, safeguarding the religion, giving donations for community development, setting up the community bank project, projects to develop students and community vacations, projects to support sports, to buy local products to support tourism, farming and teaching, projects to set up leaders' council and find volunteers. The next highly acclaimed activities are tree-planting to conserve the environment, to be followed by scholarship donations, Mae Ramphueng mangrove conservation, the community bank, the beach clean-up, the marine life conservation, donations and equipments for schools, donations for community development and environment safeguarding. As for the local concern toward the plant, the three priorities

from 2012 survey are 7.6% on dust pollution, 7% on traffic and 6.5% on road accidents. In comparison with those of 2011 which were 10.1% on road accidents, 7.6% on traffic jam and 7.4% on dust pollution. Even though the concern remains similar, it shows the decreasing trend. To work for solutions, the Company, through the Sahaviriya working group, has monitored and re-scheduled the Company's transport to avoid the rush hours, set up the CCTV system, together with consulting local leaders in the council to look for better solutions from the locality itself to further decrease the concern.

From the 2012 monitoring of the environmental quality, all indicators are within the official standard as follows:

Environmental Performance Index of Water Quality

Index	Unit	Analysis Result						Standard
		Tha Kham Canal		Upper Mae Ramphueng		Lower Mae Ramphueng		
		May 2012	Sept. 2012	May 2012	Sept. 2012	May 2012	Sept. 2012	
pH	-	7.3	7.4	7.2	7.4	8.2	7.5	5.0 - 9.0 ^{1/}
Suspended Solid	mg/l	18	8	15	12	14	10	-
Total Dissolved Solid	mg/l	14,150	18,550	23,750	17,850	16,600	12,750	-
Acidity	mg/l as CaCO ₃	18	16	26	17	6	12	-
Alkalinity	mg/l as CaCO ₃	139	108	152	117	129	108	-
COD	mg/l as O ₂	1,254	406	1,449	405	696	298	-
Grease & Oil	mg/l	<3	<3	<3	<3	<3	<3	-
Total Coli form Bacteria	MPN/100 ml	330	790	240	490	79	790	No more than 20,000 ^{1/}
Iron	mg/l	0.47	0.28	0.49	0.38	0.32	0.31	-
Manganese	mg/l	0.15	0.12	0.17	0.17	0.10	0.09	No more than 1.0 ^{1/}

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

Measured/analyzed/controlled by

ALS Laboratory Group (Thailand) Co., Ltd.

Recorded by

Mr. Thanong Viriyasahakij

Examined/controlled by

Ms. Yupaporn Chanpleng (๓-204-๙-4700)

Analyzed by

Ms. Narin Saiseng (๓-204-๙-4715)

Telephone

0-2715-8700

Ambient air quality around 5 stations

Index	Average of minimal-maximal quantity of air found		Standard
	13 - 20 May 2012	14 - 22 Sept. 2012	
Quantity of dust and particles (mg/m ³)	0.018 - 0.077	0.018 - 0.056	No more than 0.330 ^{1/}
Quantity of sulfur dioxide gas (mg/m ³)	0.007 - 0.018	0.008 - 0.024	No more than 0.300 ^{1/}
Quantity of nitrogen dioxide gas (mg/m ³)	0.010 - 0.049	0.007 - 0.049	No more than 0.320 ^{2/}
Quantity of dust less than 10 microns in diameter (mg/m ³)	0.009 - 0.034	0.009 - 0.027	No more than 0.120 ^{1/}
Quantity of hydrogen chloride (mg/m ³)	<0.001	<0.001	-

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

^{2/} Ambient Air Standards, Notification of the National Environment Board, No. 33, B.E. 2552

Remark: <0.001 is the Detection Limit of HCl. HCl does not have specific standard.
Measured/analyzed/controlled by SPS Consulting Service Co., Ltd.
Recorded by Mr. Augrit Tasanajumrune (13 - 20 May 2012) and Mr. Kitti Srithonglor (14 - 22 Sept. 2012)
Examined/controlled by Ms. Jarinee Nuntawisutr (๓-011-๙-4550)
Analyzed by Ms. Jutarat Phuphan (๓-001-๙-4575)
Telephone 0-2939-4370-2

Air emission from the Furnace I and II

Index	Result				Standard
	3 Feb. 2012	16 May 2012	17 July 2012	19 Sept. 2012	
Quantity of particle intensity (mg/m ³)	67.7	124	195	164	No more than 240 ^{1/}
Quantity of sulfur dioxide gas intensity (SO ₂) (ppm)	453	447	566	475	No more than 800 ^{1/}
Quantity of the intensity of nitrogen dioxide gas (NO _x) (ppm)	76.7	65.8	154	111	No more than 200 ^{1/}
Quantity of carbon monoxide gas intensity (CO) (ppm)	1.99	13.1	<1	7	No more than 690 ^{2/}

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

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

Remark: <0.001 is the Detection Limit of CO.
Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd. (3 Feb. 2012 and 16 May 2012)
Recorded by Mr. Wichan Choonharat (๓-004-๙-4703)
Examined/controlled by Ms. Yupaporn Chanpleng (๓-204-๙-4700)
Analyzed by Ms. Kanokporn Anake (๓-004-๙-4714)
Telephone 0-2715-8700
Measured/analyzed/controlled by SPS Consulting Service Co., Ltd. (17 July 2012 and 19 Sept. 2012)
Recorded by Mr. Kitti Srithonglor
Examined/controlled by Ms. Jarinee Nuntawisutr (๓-011-๙-4550)
Analyzed by Ms. Jutarat Phuphan (๓-001-๙-4575)
Telephone 0-2939-4370-2

Air emission from the Furnace III

Index	Result				Standard
	20 Sept. 2012	27 Oct. 2012	8 Nov. 2012	22 Nov. 2012	
Quantity of particle intensity (mg/m ³)	82	74	50	60	No more than 120 ^{1/}
Quantity of sulfur dioxide gas intensity (SO ₂) (ppm)	227	386	334	345	No more than 800 ^{1/}
Quantity of the intensity of nitrogen dioxide gas (NO _x) (ppm)	90	112	102	111	No more than 180 ^{1/}
Quantity of carbon monoxide gas intensity (CO) (ppm)	2	0.7	1.7	1.2	No more than 690 ^{2/}

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

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

Measured/analyzed/controlled by	SPS Consulting Service Co., Ltd.
Recorded by	Mr. Kitti Srithonglor
Examined/controlled by	Ms. Jarinee Nuntawisutr (๓-011-๙-4550)
Analyzed by	Ms. Jutarat Phuphan (๓-001-๙-4575)
Telephone	0-2939-4370-2

Air emission from the scrubber PPPL (from the pickling and oiling process)

Index	Result		Standard
	17 May 2012	18 Sept. 2012	
Quantity of hydrogen chloride gas (mg/m ³)	0.04	0.02	No more than 200 ^{1/}

^{1/} Pollutant emission standards for industry, Notification of the Ministry of Industry B.E. 2549 (For manufacturing process without fuel combustion, calculated at actual oxygen concentration in emission when measured)

Measured/analyzed/controlled by	ALS Laboratory Group (Thailand) Co., Ltd.
Recorded by	Mr. Saksit Paisarnpisuth
Examined/controlled by	Ms. Yupaporn Chanpleng (๓-204-๙-4700)
Analyzed by	Ms. Sarunya Chalermtrumrong (๓-004-๙-4717)
Telephone	0-2715-8700

Air emission quality from Boiler

Index	Result		Standard
	16 May 2012	17 Sept. 2012	
Quantity of particle intensity (mg/m ³)	11.2	1.7	No more than 120 ^{1/}
Quantity of sulfur dioxide gas intensity (SO ₂) (ppm)	< 2	< 2	No more than 800 ^{1/}
Quantity of the intensity of nitrogen dioxide gas (NO _x) (ppm)	49.4	4.3	No more than 180 ^{1/}
Quantity of carbon monoxide gas intensity (CO) (ppm)	1.0	13.6	No more than 690 ^{2/}

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

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

Remark: <2 is Detection Limit of SO₂.

Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd.
 Recorded by Mr. Saksit Paisampisuth
 Examined/controlled by Ms. Yupaporn Chanpleng (๓-204-๓-4700)
 Analyzed by Ms. Kanokkorn Anake (๓-004-๓-4714)
 Telephone 0-2715-8700

Air emission quality from Dust Collector

Index	Result		Standard
	19 May 2012	22 Sept. 2012	
Quantity of particle intensity (mg/m ³)	3.59	3	No more than 120 ^{1/} , 300 ^{2/}

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

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

Measured/analyzed/controlled by ALS Laboratory Group (Thailand) Co., Ltd. (19 May 2012)
 Recorded by Mr. Wichan Choonharat (๓-204-๓-4703)
 Examined/controlled by Ms. Yupaporn Chanpleng (๓-204-๓-4700)
 Analyzed by Ms. Kanokkorn Anake (๓-004-๓-4714)
 Telephone 0-2715-8700
 Measured/analyzed/controlled by SPS Consulting Service Co., Ltd. (22 Sept. 2012)
 Recorded by Mr. Kitti Srithonglor
 Examined/controlled by Ms. Jarinee Nuntawisutr (๓-011-๓-4550)
 Telephone 0-2939-4370-2

Development and Participation in Social and Community Responsibility

In 2012, SSI initiated 35 projects for sustainable development with an emphasis for vulnerable people in society, participating activities from staff, the local people and related authorities via volunteering educational activities, known as "SSI Arsa," environmental conservation, occupational development, health development, religious and cultural safeguarding. These activities demonstrate the Company's commitment towards good citizenship and earn the trust of Bangsaphan locals and stakeholders who share the hope to strengthen the community and society for a happy living.

1. Social Capital Development

1.1 Strengthening and Innovating the Steel Industry

1.1.1 Thailand Steel House Contest 2012

Thailand Steel House Contest, which is awarded with HRH Princess Maha Chakri Sirindhorn Trophy and over Baht 1 million, aims at encouraging steel-related innovation and serving as an area for exchanging ideas among architects, engineers and those in the metallurgical circle to apply steel for housing and search for new knowledge.

Thailand Steel House Contest 2012 was organized under the concept of "Greenovation: Less is More," aiming at making the contest results feasible for real construction.

This project was carried out in co-operation with the Home Builder Association and Ban Lae Suan Publishing House as partners and judges. Responses come from 165 students and 21 professionals.

1.1.2 The 6th Academic Conference on Metallurgy

SSI has continuously supported the Academic Conference on Metallurgy. In 2012, the 6th conference was arranged by the Department of Chemical Industry, Faculty of Science, Chiang Mai University, whereby the Company supported 2 awards for annual outstanding researchers.

1.1.3 South East Asian Iron and Steel Institute (SEAISI) Conference & Exhibition 2012

SSI, in co-operation with the Iron and Steel Institute, supported the Southeast Asian Iron and Steel Institute Conference & Exhibition 2012 (SEAISI) in order to exchange views on the use of steel products for the steel-based industry as well as promotion of regional co-operation.

1.2 Strengthening Life Quality

1.2.1 Chakri Day Run

SSI supported the Rajcha Pracha Samasai Foundation under royal patronage in arranging the Chakri Day Run 2012 on 6 April 2012. It was aimed at honoring the power eight monarchs of the Chakri Dynasty and honoring the 85th royal anniversary of his Majesty King Bhumiphol. The competition

Thailand Steel House Contest 2012 was organized under the concept of "Greenovation: Less is More," aiming at making the contest results feasible for real construction.



also raised public awareness on benefits of exercises and helping each other. The benefits from this activity went towards the foundation for the vulnerable people who suffered from leprosy and 999 educational funds for orphans of aids-related deceased parents under the royal-guided supervision of the Rajcha Pracha Samasai Foundation.

1.2.2 Sahaviriya Bangkok Triathlon 2012 in Honor of His Majesty the King

SSI, in co-operation with Rajcha Pracha Samasai Foundation under royal patronage, arranged “the 4th Sahaviriya Bangkok Triathlon 2012” for athletes to compete for the Royal Trophy best owned by His Majesty

the King on 3 June 2012. The event was aimed at honouring His Majesty the King through raising funds for royal charities for children affected by leprosy and HIV. Such goals coincided with CSR activities of the Company which stress helping and strengthening vulnerable people.

1.2.3 Thailand Iron Man Mini Marathon 2012

SSI, with the co-operation from the other steel industry partners namely Thai Cold Rolled Steel Sheet Plc. (TCRSS), Blue Scope Steel (Thailand) Ltd. and The Siam United Steel (1995) Co., Ltd., jointly arranged a mini marathon for vulnerable people. The 5th Thailand Iron Man Mini Marathon 2012 managed to raise Baht 2.5 million from 25 charities.

The activity was held on 3 November 2012 at Lumpini Park and was attended by over 1,500 participants. From the past continuity five years, over Baht 12 million was raised for charities for benefits of vulnerable people, strengthening and sustaining their life in the society.

1.2.4 *Bangsaphan Youth Triathlon Team 2012*

SSI opened up sport opportunities to the local youth from Bangsaphan by encouraging them to apply and learn basic skills before being selected to represent the “Bangsaphan Youth Triathlon Team” to compete in sport events organized by Sahaviriya Group. In 2011, 4 members of the Bangsaphan youth were trained and competed in major national events. In 2012, the second selection was held which 5 out of 20 young people became the youth representatives from Bangsaphan.

1.3 Strengthening Vulnerable People

1.3.1 *SSI Taking Kids to the Movies*

SSI sponsored trips for 100 disadvantaged children from 4 foundations namely Ban Nok Kamin Foundation, Pakkred Home for Boys, Thanyaporn Home for Girls and Mirror Foundation to see the movie “Real Steel” which, apart from being entertaining, inspired children to strengthen their character in life.



1.3.2 *Cycling Superheroes Project*

The management team and staff members of SSI arranged and supported the Cycling Superheroes' activity during which the cyclists in their superheroes suits cycled from province to province to gather donations all of which were given to vulnerable children in rural areas.

1.4 Building SSI Arsa Culture

The “SSI Arsa” project is an activity in which staff and the management team of the Company share in order to help the society and community in Bangsaphan district and to build up their own self-esteem.

1.4.1 *SSI Volunteering to Develop Bangsaphan Community*

In 2012 SSI staff jointly carried out one major activity and 38 subsidiary activities under the project “A hundred goodness, A thousand hearts of SSI Arsa” in order to further develop Bangsaphan through participation.

- **SSI Arsa's major activity:** 16th SSI Arsa: building the multi-purpose sports field (SSI-Ban Por Daeng) in Moo 3 district of Ban Por Daeng in Kamnerd Noppakhun subdistrict.

- **SSI Arsa's minor activity:** The 38 minor voluntary activities comprise the 17th good deed: building a communal sports field for Rattana Kosin community in Kamnerd Noppakhun subdistrict, the 18th good deed: renovating school building for Ban Sida Ngam School in Moo 10, Ang Thong subdistrict, Thap Sa Kae district, the 19th good deed: enlarging the police service unit at Khlong Ploen in Moo 9, Ron Thong subdistrict, the 20th good deed: painting the temple wall of Wat Thammarat in Moo 5, Ron Thong subdistrict, the 21st good deed: building sheds for Ban Thung Kraton School in Pak Praek subdistrict, Bangsaphan Noi district, the 22nd good deed: repairing the playground for Ban Chamuang School in Moo 3, Pongprasas, the 23rd good deed: improving the flagpole area of the scout camp in Pa Klang Aoe, Mae Rampheung subdistrict, the 24th good deed: building an aerobic stage



and surroundings for Rattana Kosin community in Kamnerd Noppakhun subdistrict, the 25th good deed: repairing the parking space and areas around the pavilion of Wang Yao Buddhist temple in Ron Thong subdistrict, the 26th good deed: repairing the gate of Wat Huay Sai Khao in Kamnerd Noppakhun subdistrict, the 30th good deed: repairing the water tank and lid at Ban Huay Kheaw School, the 31st good deed: repairing the hexagon pavilion at Ban Huay Kheaw in Moo 6, Pongprasas subdistrict, the 32nd good deed: repairing the school building in Ban Madeauthong in Khao Lon subdistrict, Thap Sakae district, the 33rd good

deed: painting the school building in Ban Pak Khlong, Bangsaphan subdistrict, Bangsaphan Noi district, the 34th good deed: repairing the crematorium at Wat Khlong Nam Khem in Bangsaphan subdistrict, Bangsaphan Noi district, the 35th good deed: building the steel frame at Bangsaphan School (Ban Lang) in Mae Ramphueng, the 36th good deed: repairing the crematorium at Wat Tham Khiriwong in Moo 1, Thongchai subdistrict, the 37th good deed: improving the landscape of the Bangsaphan District Office and Wat Khao Bot in Moo 1, Kamnerd Noppakhun subdistrict, the 38th good deed: cleaning the waterways



of Khlong Wang Krajong in Moo 1, Kamnerd Noppakhun subdistrict, the 39th good deed: building the bus-stop shed along Phet Kasem Road at Ban Khoyaychim in Moo 5, Ron Thong subdistrict, the 40th good deed: improving the sports field in Ban Sai Ku in Moo 5, Ron Thong subdistrict, the 41st good deed: painting Ban Chamuang School in Moo 3, Pongprasas subdistrict, the 42nd good deed: setting up the entrance sign to Bangsaphan School in Moo 8, Mae Ramphueng subdistrict, the 43rd good deed: building the aerobic stage for the Kamnerd Noppakhun municipality in Moo 1, Kamnerd Noppakhun subdistrict, the 44th good deed: painting Ban Aoe Noi School in Mueang district, the 45th good deed: repairing the crematorium in Ban Kling Loi monastery in Moo 8, Ron Thong subdistrict, the 46th good deed: repairing the hall and kitchen roof of Wat Tham Khiriwong in Moo 1, Thongchai subdistrict, the 47th good deed: leveling the ground and paving the hall floor of Wat Don Takhien, Bangsaphan Noi district, the 48th good deed: building and repairing toilets in Ban Huay Sai Khao monastery in Moo 5, Kamnerd Noppakhun subdistrict, the 49th good deed: building and repairing toilets Ban Thung Khi Tai, Ron Thong subdistrict, the 50th good deed: repairing the community hall, Ban Lak Muang, Pongprasas subdistrict, the 51st good deed: building the chicken shed and the garbage-recycled shed at Ban Nong Chang School in Moo 2, Chaikasem subdistrict, the 52nd good deed: building dikes for Wang Yao reservoirs, Ron Thong subdistrict, the 53rd good deed: leveling the playground of Ban Yang Kao School in Moo 5, Chaikasem subdistrict, the 54th good deed: painting the temple wall of Wat Chamung in Moo 3, Pongprasas subdistrict.

The total number of staff members involved is 796, or 6,368 working hours, and of volunteers from the community are 1,278 or 10,224 working hours.

1.5 Expanding the Voluntary Networks to Stakeholders

1.5.1 SSI and the Media Volunteering Project

89 members of SSI together with Prachuap Khiri Khan Public Relations Office, MCOT radio station and members of the press from Prachuap Khiri Khan joined hands to volunteer to improve the Pre-school Child Care Centre at Wat Noen Dindaeng, Thap Sakae district, Prachuap Khiri Khan. The activities comprised roofing, fencing for the children's playground, repairing children's playthings and planting 62 trees along the community roads.

1.5.2 Youth Arsa – “Big Cleaning Day at Ban Nailog

SSI, together with the youth from Bangsaphan, organized the “Big Cleaning Day” at Ban Nailog School which involved over 400 local people. All jointly cleaned the 2.5 km road from Ban Nailog junction to Pong reservoir, selected garbage that had been collected for the waste bank of Ban Nailog school to raise funds for educational activities to be held at Pong reservoir area, Thongmongkol subdistrict, Bangsaphan, Prachuap Khiri Khan.

1.5.3 Youth Volunteering Project for Society

In 2012, SSI sets up networks of local voluntary youth named “Arsa Bangsaphan Youth Group.” The youth were taught screening skills and given starting funds to work on

T-shirts and sell the products to raise funds for vulnerable people. In 2012, which is the first year of the project, 45 youth joined hands in using their raised fund towards:

- The first sum of Baht 10,000 was given to vulnerable HIV-infected orphans at Thammarak Children's Home (Wat Phrabat Namphu), Nong Muang district, Lop Buri.
- The second sum of Baht 10,000 was given for lunch funds for the vulnerable children at Border Police School at Ban Pa Mak, Sam Roi Yot district, Prachuap Khiri Khan.

1.6 Other CSR activities

1.6.1 Funds for the Thai Red Cross

HRH Princess Maha Chakri Sirindhorn granted the occasion from a royal audience for SSI representatives to donate the funds for the Thai Red Cross to pursue royal charitable courses.

1.6.2 Thai Steel for Sustainability of Thai Rice

SSI, staff members and Bangsaphan networks donated funds via TV Burapha Co., Ltd., for Wat Pa Suan Tham Ruamjai to buy land for a research centre for local crops, in Pa Tio district, Yasothon province. This research centre aims to look after and develop rice crops, local vegetables, render farmers survive sustainably and serve as a learning hub for farmers, local wisdom and non-toxic agriculture.



2. Community Development

SSI business operation in Bangsaphan, Prachuap Khiri Khan, not only resulted in economic growth, but also created better living for the locals in these areas through many participatory community developments from all sectors namely the Company, staff, local inhabitants and offices and through the voluntary spirit development, environmental conservation, occupational and income development, health and religious and external development. In 2012, over 26 projects were carried out from community development, all of which reflected the commitment towards good citizenship and earned trust from Bangsaphan inhabitants and stakeholders from having strengthened the community and society and built happier living.

2.1 Jointly Developing the Quality of the Community Education

SSI jointly participated in raising the quality of education of Bangsaphan and surrounding areas in three dimensions namely developing teachers and those involved in educational processes, developing learners and developing school building so as to create similar educational opportunities to those in big cities.

2.1.1 Sahaviriya Funds for Bangsaphan Educational Developments 2012

In 2011, a project was started to set up Sahaviriya Funds for Bangsaphan Educational Developments 2012. Through co-operation with the Office of the Basic Education Commission (OBEC) and from the Office of Prachuap Khirikhan Primary Educational Service Area Zone 1, were invited to send their 3-year plan for educational development, which emphasized all three dimensions, to compete for the annual funds of Baht 2.6 million for the implementation of the plan. This proved to be a new path in raising the quality of education in Bangsaphan towards excellence.



The results of the project are as follows: In 2011, two schools were selected to be granted the funds for educational development namely Ban Suan Luang School and Ban Don Sanga School. Both implemented project according to the plan. Their national quality assessment (O-NET) in 8 subject matters significantly rose from that of 2010 (Grade 6 Primary level of Ban Don Sanga School rose by 3.48%, Ban Suan Luang rose by 1.56%. Grade 3 of Secondary level of Ban Don Sanga School rose by 4.71%, Ban Suan Luang by 5.83%). It is to be commended that both schools have achieved the 15 standard criteria of assessment for quality education set by the Office of Prachuap Khirikhan Primary Educational Service Area Zone 1.

2.1.2 Scholarships Students in the Community

Annually SSI and Sahaviriya Group give scholarships to students from schools in Bangsaphan from primary to secondary levels. In 2012, students from 21 schools received 197 scholarships for 190 primary and secondary levels and 7 continuous Bachelor Degree level, totaling Baht 439,000.

Over 20 years of SSI's industrial enterprise in Bangsaphan, an agricultural-based area, has so far proved that **agricultural and industrial societies can co-exist and grow together with mutual care into a harmonious and happy society** while the inhabitants have steady jobs and sufficient income.

2.1.3 Sahaviriya Group supports BSP Iron & Steel Technology Institute to Develop Potential of Technician in Steel Industry

In 2012, SSI supported the funds of Baht 1,030,000 for Bangsaphan Iron & Steel Technology Institute to develop potential of technician in steel Industry which is a continual project to develop students' potential to match the needs of the iron and steel industry. This was a co-operation under the major project of providing technicians for the entire steel industry between the Bangsaphan Iron & Steel Technology Institute and Sahaviriya Group.

2.1.4 Young Agriculturist Project

In 2012, the Company turned the organic agriculture to the Hydroponics System, starting in a pilot school, Ban Tha Kham School in Mae Ramphueng subdistrict, Bangsaphan and promoted marketing studies by letting the youth sell their products to restaurants and resorts in touristic areas and to hospitals in Bangsaphan.

2.1.5 To Be Engineer Project

SSI organized a project to provide young engineers' experiences for the local youth to learn about the steel industry and its related technology so as to encourage them to plan their studies and promoted their interest in pursuing their higher education in engineering. This project has continued from 2005 - 2012. The 8th session was attended by 5,494 young engineers.

2.2 Job Development to Strengthen Home Economy

Over 20 years that SSI has operated the industry in Bangsaphan, an agricultural-based where pineapple, rubber tree and coconuts are main products and has so far proved that agricultural and industrial societies can co-exist and grow together with mutual care into a harmonious and happy society while the inhabitants have steady jobs and sufficient income. With adhering to Thai traditional living culture, the Company supported the agriculture development which will help gain more income for local agriculturalists and housewife groups.

2.2.1 Sahaviriya Ruam Pattana Project

Sahaviriya Ruam Pattana Project set up 3 groups of community banks in 4 subdistricts around the plant, totally 15 banks. The first group set up in 2010 comprises Tha Kham, Chamuang, Suan Chat and Ma Rong community banks, 594 members and Baht 4,164,390 funds, divided into 81% of community funds (Baht 3,364,390) and 19% of Sahaviriya's added funds (Baht 800,000). The second group set up 6 community banks nearby: Tha Manao, Klang Na, Po Daeng, Talad, Lak Mueang, Chai Mongkol, now have 1,076 members Baht 6,197,640 funds, divided into 90% of community funds (Baht 5,597,640) and 10% of Sahaviriya's added funds (Baht 600,000). The third group set up 5 community banks namely Tang Sai, Don Thong, Phai Tha, Thung Lan Khauy and Nong Ta Cha community banks, now have 710 members and Baht 1,259,210 funds. In sum, there are 2,380 members and Baht 11,621,240 funds.



2.2.2 Increase Locals Hiring from the Community

In compliance with the policy of promoting local workforce and discouraging Bangsaphan and local surrounding areas' locals to move away in search of income, SSI, in 2012, altered the policy to increase the ratio of employment of local inhabitants and informed the data on job vacancies of SSI and Sahaviriya Group to monthly meeting of community leaders, together with the result of last month's employment, and present vacancies. In 2012, from the target of 270 employees, the Company admitted 304 permanent and hired staff members, equaled 112.5%.

2.2.3 Bangsaphan Organic Fertilizer Bank 2012

SSI followed up and upgraded the efficiency of the activities of three groups of bio-fertilizer banks namely SSI bio-fertilizer of Moo 4, Pongprasas, of Moo 9, Pongprasas and of Moo 3, Kamnerd Noppakhun. Meetings were held to monitor and assess the work, seminars and on-the-job trainings were also organized for the three groups' members.

2.2.4 SSI Promotes Local Product Sales

SSI supported the added-income jobs for community produces from Bangsaphan by buying products from various groups and organized a mobile local products project, selling local good and economical products in the ground of the Company, so as to make local products well-known and add income to Bangsaphan locals.

2.2.5 Purchase of Products and Services from the Community

SSI has a clear policy to support locally-made products and continuously carried such purchase. In 2011, SSI spent Baht 145 million on local products and services. The Company and Sahaviriya Group move towards increasing the purchase, comprising local products, products needing to attain producing standards, products that the community serves as sale representatives, and local services. This resulted in the amount of purchasing increased to Baht 190 million, beyond the set target of Baht 180 million or an increase of 31% in 2012.

2.3 Safeguarding and Upgrading the Environmental Quality

SSI considers most important to be responsible to the environment and natural resources. Apart from controlling the industrial processes so as to make sure that no pollution is caused that affect the quality of life and health of staff and local inhabitants. SSI, together with related offices, co-operate to continuously raise the quality of environment.

2.3.1 SSI Beach Clean-Up

SSI, both the management team and staff, together with students, business sectors and Bangsaphan people annually joined together on the World Environment Day to collect garbage on Mae Ramphueng beach, Mae Ramphueng subdistrict, Bangsaphan. The distance covered was 3 kilometres, and in 2012, participants numbered 620.

2.3.2 Mangrove Forest Planting to Honor Her Majesty the Queen's 80th Birthday

SSI took part in the Army's activity "Restoring the mangrove in honour of Her Majesty the Queen to commemorate Her Majesty's Eighty Birthday. The activity aimed at restoring the deteriorated mangrove to its former state and inculcating conservation spirit to local people in Khlong Bang Nang Rom areas, Mueang district, Prachuap Khiri Khan.

2.3.3 Bangsaphan Car Free Day

SSI and Sahaviriya Group, in co-operation with Bangsaphan District and the Local Administration Office organized Bangsaphan Car Free Day on Sunday, 23 September 2012 in order to encourage everyone to decrease global warming. The project "Bangsaphan Car Free Day" aimed at interesting local people in the conservationist way of life as well as strengthening their health. Locals aged 5 - 80 years took part on 365 bicycles, having asked the community not to use cars from 8.00 - 8.30 hours (30 minutes). It was estimated that 4.51 tons of carbon dioxide were reduced from this activity.



2.3.4 Bicycle Riding and Tree Planting to Celebrate the 85th Birthday of His Majesty the King

SSI and Sahaviriya Group asked 30 cyclists to take part on a 30-kilometres natural pathway from the office of Bangsaphan district to Thongchai subdistrict to join local people plant 85 trees to commemorate His Majesty the King's 85th Birthday. The trees would in time give shade to Wat Tham Khiri Wong, Thongchai, Bangsaphan, Prachuap Khiri Khan.

2.3.5 SSI Waste Bank Project

SSI Waste Bank Project desired from the Clean Technology Teachers project which focused on the learning and understanding of local applied technology to manage garbage and waste. The follow-up Waste Banks for Schools aimed at teaching local children to be able to divide garbage according to appropriate types, use the correct methods to dispose accordingly and recycle the renewable garbage. From 2009 - 2012, SSI carried out this activity in 8 schools namely Ban Nailog School, Ban Nong Yahplong School, Ban Suanluang School, Bangsaphan Kindergarten School, Ban Khlong Loy School, Ban Morasuab School, Ban Nong Chan School and Women Secretaries 1 School.

2.3.6 Super Smart & Intelligent Kids (SSI Kids)

SSI, in co-operation with Natural Resource and Environmental Office, organized academic talks and recreational activities to disseminate the Company's environmental concept. Experiments were carried out among Prathom 5 grades from 4 schools in Mae Ramphueng to test the percentage of oxygen in water to test for the degree of acid in water, besides learning about marine animals. 86 children joined the activities.

2.3.7 Teen Detective Project

The Company allowed secondary-level youth from Bangsaphan to detect and learn about the local environment situation of the Company through filming a local television programme. In 2012, the 40 youth who joined the project produced a 4-part series on noise-control, heat-control, electricity usage and transportation of SSI.

2.3.8 Youth Conservation Camp

SSI, in co-operation with the Prachuap Khiri Khan Primary Educational Service Area 1, organized 8 environmental learning camps for 169 local representatives from schools in Bangsaphan. Local resource conservation in everyday life was taught to 826 junior conservationists.



2.3.9 Love the King, Preserve Bangsaphan, the 5th December 2012

SSI, together with the local authority, organized an activity to honour His Majesty the King on His Majesty's 85th Birthday, by planting 985 under-conservation trees such as apinau, mahogany, acacia mangium wild and gooseberry aroma, releasing 1,500 freshwater fish in the reservoir of Moo 4, Ban Huay Kriab, Thongmongkol subdistrict, Bangsaphan, Prachuap Khiri Khan. The total number of participants was 1,363.

2.4 Social Activities to Safeguard Culture and Religion

The Bangsaphan community is distinct in their harmonious way of life, based on long-standing culture and tradition. As good citizens, SSI supported those in need in the community and helped safeguard culture and religion.

2.4.1 Culture and Religion Activities

SSI supported the restoration and building of community temples, took part in major religions and traditional events and supported other related activities which sustained religious values and tradition of Thailand.

2.4.2 Activities on Elders Day 2013

SSI, in co-operation with the Bangsaphan Hospital and Health Network of Bangsaphan, organized 2012 Elder's Day activities by disseminating knowledge on the elderly healthcare and sprinkle water to elderly people to show gratitude and respect to the elderly. Local elders participating numbered 104.

3. Social Dimension of SSI's CSR

3.1 SET Awards on CSR 2012

SSI applied to be considered for the SET Awards: CSR Awards 2012 by sending the related data to the committee concerned. SSI achieved 95.78% outcome, which was 31.62% above the group average. SSI received full marks for the overall CSR activities, good governance, fair business practices, fair labour relations, responsibility towards consumers, social and community development, environmental safeguarding, innovation and dissemination of CSR innovative practices.

3.2 Joining CSR Networks of the Stock Exchange of Thailand

4. SSI's CSR Activities in the UK

SSI plants in the UK just resumed the production in 2012, after a 2-year cessation. The first priority was to link SSI-UK with the local community through discussions, exchanging views with representative groups, including the nearby Golf Club, close co-operations were envisaged and concerns over environmental issues that might happen were jointly discussed.

Besides, SSI UK set up links with Teesside University informing students of the Company and opening opportunities to join SSI UK by job application on training.

As for 2013, SSI UK will further develop a more-detailed CSR plan to be implemented.

Human Resource and Rights

Happiness Deliveries in Sufficiency Economy Way

Since 2010, Sahaviriya Steel Industries Plc. (SSI) has applied the idea of “HappyWorkplace” concept to its management and until 2012 the Company not only still applied the idea, but also combined the idea with His Majesty the King's idea of sustainable development. The combination was used as a tool to manage its human resources and human capital. Moreover, SSI focused on generating talented and good staff who have “SSI Way” in their working process and therefore can stay together in the organization which is considered to be a “Home” for everyone. In 2012, the Company created various activities and projects to generate happiness for its staff and sooth them from hard work, therefore, they will be happy with their job and work at their best.

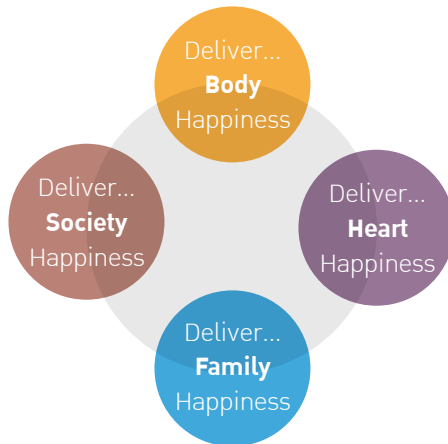
As for the support of sustainable development, SSI has applied His Majesty the King's idea with various projects, including sufficiency economy role model visit project and supporting staffs to do agricultural demonstration in the plant to learn various agricultural practices, therefore, they will be happy to learn about agriculture. These activities were well received from staffs.



Moreover, the Company instilled “SSI Way” to its staff, therefore, they will understand and act according to expectation. In 2012, SSI has organized many projects to its staff to learn to be talented and good staff according to SSI Way such as Steel Man Steel Mind Project, aimed at instilling SSI's vision and mission in its staff, Value Hunter Project, aimed at supporting staff to do good deed and there were more than 1,000 activities of good deed, created by staff, A Hundred Goodness, A Thousand hearts of SSI Arsa, aimed at encouraging staff to develop their community.

The Happy Workplace was not only welfare arrangement and recreation activities, but the Company also considered the importance of creating self-happiness which staff can further pass on to their community, society and the country.

Employers
happiness
is built on
“Happiness
Delivery”



Deliver...Body Happiness

These are projects, activities and welfares that SSI have launched for its staff to have basic living standard, including 4 basic living elements and support health and sanitation which will prevent unhealthiness as follows:

- Provide annually 2 uniforms
- Arrange 5-route transportations for staff in Bangsaphan to travel to the office
- Provide monetary support for staff who live outside Bangsaphan area
- Arrange free rice and low price food with enough nutrition for staff
- Provide monetary support for transportation for staff who work at the plant
- Provide extra money support for fieldworker and oversea staff
- Provide extra money for shift workers
- Provide provident fund, therefore, staffs will have fund after retiring
- Organize internal sport, Sport Day and Anti-Drugs sports
- Arrange “Staff Health Week” campaign to support staff to learn to take care of their health
- Organize Drug Free Workplace Project to bring collaboration from everyone involved in protecting and solving drug problems in organizations
- Arrange lectures on HIV/AIDS
- Provide health assurance and life assurance

Deliver...Heart Happiness

Happy Heart comes from “giving” and “sacrifice.” The Company has organized project related to local traditional culture and living style. Moreover, Heart Happiness can be created from communicating and solving problems together between management team and staffs. Heart Happiness can be seen as follows:

- Arrange merit making in New Year
- Arrange paying homage for the elderly in Songkran Day
- Arrange wax candles making for Buddhist Lent Day
- Provide monetary support for children with multiple disabilities
- Arrange Volunteering activity to build a garage for staff
- Organize merit making for staffs' birthday
- Arrange Night Work Place Visit
- Organize Line Visit
- Arrange Volunteering activities in Mother's Day and Father's Day
- Organize staff hospital visit
- Arrange help for employee who is in need
- Arrange New Year celebration
- Set up Communication Development Project
- Organize activities for 10 clubs according to staffs' preference i.e. 5 sport clubs, photography club, handicraft club
- Arrange Lectures on economy sufficiency
- Arrange activities, supporting good people according to SSI Way
- Arrange mindfulness development project according to Dharma yoga at Dharma Yoga Garden
- Set up Knowledge corner, Steel library
- Arrange Innovation activities
- Arrange Show & Share activities
- Set up Big Cleaning Day
- Arrange merit making at the plant

Deliver...Family Happiness

Happiness of staff starts from their families, therefore, SSI expands the delivery of happiness from its staffs to their family through project, activities and welfares as follows:

- Arrange lectures on sideline job for staffs and their family with 3 sideline jobs
- Arrange Family Day activities
- Organize Family Camp "Steel Man Steel Mind" activities
- Arrange Cremation fund
- Arrange Health assurance for staffs' family
- Arrange Children's Day activities for staffs' children
- Set up a co-operative to support saving

Deliver...Society Happiness

SSI wants its staff to have "volunteering mind," to sacrifice and to deliver happiness to the society and the community where SSI operates. Therefore, the Company has organized many activities to deliver happiness to the society as follows:

- Arrange volunteering activities for both staffs and the community
- Arrange blood donating to the provincial Red Cross of Bangsaphan
- Arrange tree planting with local people
- Support staffs to join local and national political activities
- Encourage staffs to play sport with officers from the government offices in Prachuap Khiri Khan
- Arrange Women's Day activities
- Arrange A Hundred Goodness, A Thousand Hearts of SSI Arsa Project

Heart Happiness can be created from communicating and solving problems together between management team and staffs.



Intra-Organization Communication

In order to build good relationship and encourage understanding between the organization and all staff level, SSI focuses on creative communication via many channels as follows:

Communication Channel	Objective	Outcome 2011
Message from Group CEO and President	To inform and make all staff aware of policies, operation directions and major performances of the Company directly from Group CEO and President.	4 times
Arrange a stage for presentation of job performance and operation plans	To allow all staff of management level to acknowledge and share their opinions on the direction and business operation, both for the Company in overview and for different departments, therefore, they can communicate information to their teams in a clear and accurate manner.	1 policy presentation/year 2 achievement presentations/year
Voice on the Line	To provide information to staff directly from management team in different lines of work to make them understand the business vision or related operation.	5 days/week
Morning Talk (monthly/weekly)	To allow managers and staff to have two-way communication to update news related to the Company and to solve work issues.	1 time/week
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 staffs for their good performance and become a role model according to SSI Way.	4 issues
Face to Face Workface Visit	To 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 department 1 time/quarter
Customer Relations Officers visit shift staffs at their workplace	Visit shift workers at their workplace.	12 times
Welfare Committee	To communicate employees' requirement to the management team and strengthen relationship between executives and staffs.	4 times
Shop Steward Committee	To allow representatives from each department to inform updated information to employees and listen to comments and suggestions.	4 meetings
Supervisor Communication Development Project	To develop creative communication skill among supervisors, therefore, they can communicate with their staffs and apply the skill to their daily life.	3 times
Electronic letters	To publicize updated information and activities of the Company both finished and future projects and to provide useful information related to daily life and health.	12 times
SSI Way Understanding Activities	To help employees to learn and understand "SSI Way" which is the value that the Company encourages staffs to be "good person," "talented person," and "qualified person" who help develop the organization and the society.	6 times

Communication Channel	Objective	Outcome 2011
Internal TV	To distribute major information to all staff quickly.	50 times
Communication via Social Media (Facebook - Page - SSI Employee Relation and Welfare)	To inform staffs about updated information regarding the organization via two way communication by using Social Media as a tool to communicate any time and in any place. The communication can be communicated via both the internet and smart phone.	- More than 200 messages and - 5 surveys were communicated
SSI Way	To encourage employees to be talented, good people and to act according to morality and social value and to understand SSI's vision and mission.	6 times
Steel Man Steel Mind	To support the relationship between staffs' family and the Company by choosing from employees who cooperate will with the Company's activities.	1 time
Employee Engagement Survey	To survey attitude and satisfaction of employees toward the organization in various aspects such as working process, welfare, wages and working environment in order to solve and improve issues.	1 time

Employee Development

SSI has developed knowledge and skills of its employees with many methods and approaches as follows:

Guideline	Method	Outcome in 2012
On the Job Development (OJT)	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 with the knowledge and skill levels required, and monitor the outcomes regularly and closely.	155 persons
In House Classroom Training	Core Competency Course Managerial Competency Course Functional Competency Course Management Case Study Course Special Courses	163 courses 5,436 participants. Average training period 20:56 hours/person/year
Domestic and Overseas Training	Appoint staff to join trainings held by external organizations both domestic and overseas.	226 courses 540 participants Average training period 7:75 hours/person/year
Goal Program Presentation 2012	Present Goal Program which is an activities supporting updated strategy and business plan for every department in 2012.	2 times/year 1) 14 July 2012, 39 participants 2) 14 December 2012, 116 participants

Employee Engagement Survey

SSI has continuously conducted the Employee Engagement Survey since 2008 and the result of the survey showed an increasing trend. The result of the relationship between the Company and its employees was in the middle level with 58%. The Human Resources and Administration Department conducted the survey by considering supporting factors and difficulties related to level of relationship, including gender, age, working period, working field, position etc. The result will be used to develop, improve and make the next year plan. Moreover, SSI believes in making its employee happy, therefore, they will work efficiently and become vital part in sustainable development of the Company.

Number of Employees of SSI Group: 31 December 2012

Level	SSI	SSI UK	TCR	WCE	PPC	Overall
Executive	22	5	6	7	1	41
Management	118	236	62	32	5	453
Supervisor	424	337	170	171	25	1,127
Operation	440	1,180	578	210	61	2,469
Overall	1,004	1,758	816	420	92	4,090

SSI believes in making its employee happy, therefore, they will work efficiently and become vital part in sustainable development of the Company.



Innovation, Research and Development and Distribution

In 2012, SSI has continuously aimed at capability increasing in order to support its vision of moving forward to become an innovative organization by setting the Innovation Process Working Committee, conducting researches and developing new products to meet customers' need. As a result, the Company could deliver customer Innovated Value Products 308,450 tons or 14% out the revenue.

The Innovation Process Working Committee

Since 2010, SSI has set Innovation Platform to certify innovative creative production. In 2012, SSI staffs have shown their interest by submitting 216 creative innovation ideas, both individual and group. Out of this number, 210 ideas were certified by the Innovation Process Working Committee. Out of the certified projects, 40 ideas were being tested to see if they are feasible and 32 ideas were evaluated by the Innovation Process Working Committee to be applicable to develop production quality and reduce cost of production process.

Moreover, SSI has emphasized the development of ideas to become innovative products, services and strategies. Besides, the Company encourages staff member, who has never submitted any idea, to join the process by



collaborating with the National Innovation Agency (NIA) who has experiences in innovative organization, to draft training plans and make observe activities to increase knowledge and innovative potential skill for its employees, both in Bangkok office and Bangsaphan. Moreover, they enhanced the Innovation Platform to be more efficient. The Company believes that if its staffs continuously develop innovative creation for the organization, this will lead the Company to become "Innovative Plant" and push the Company forward to achieve its vision.

The Innovation Process Working Committee has launched the Excellent Innovation Contest. The innovation must pass the Innovation Platform in order to win the contest. There were 53 ideas submitted: 8 ideas related to innovative products, 18 ideas related to production process, 6 ideas related to working process and 21 ideas related to business strategies. There were 13 ideas which have passed the Platform. The project winning innovative products category was "Kan Gol Kon Lek" (Iron Man's Machinery Arm); production process category was "Creation and integration of protection system which moves from the center of HRC Spread;" working process category was "Cut Sheet 100%" and business strategy category was "Band Awareness." The contest was aimed at pushing forward the Company's vision "Innovate premium value steel products and services for customers; generate consistent profit and sustainable value for stakeholders." "Innovate premium value steel products and services for customers; generate consistent profit and sustainable value for stakeholders."



Moreover, by focusing on supporting its strength and overcoming the weakness of individual, the Company's strength will become more realistic.

1. Goal Program and Appraisal System 2.0

In 2012, SSI has continuously worked following Goal Program 2.0 and Appraisal System 2.0 in order to generate long-term competitive edge. The Company realized the importance of human resource and it is impossible for a company to be strengthened without strong and good quality employees.

Moreover, by focusing on supporting its strength and overcoming the weakness of individual, the Company's strength will become more realistic. Therefore, SSI has set innovation as a topic in Monthly Management Meeting in order to support every department to report their creativity and progress of various projects under their responsibility, so, the executives will be informed throughout 2012.

2. Move Forward and Become Innovative Organization with R&D

The research team of SSI has continuously created researches by encouraging staff to see the importance of making researches and submitting employees' researches to be certified by the National Science and Technology Development Agency (NSTDA). Since 2006 until 2012, SSI has submitted 82 projects, which was Baht 61.6 million worth, and some of the projects were certified patent. Moreover, SSI is the first and the only company among steel making companies who has handed in many researches to NSTDA each year. This reflects the determination of SSI staffs and shows the importance of research and development which will generate sustainable development.

SSI Research and Development Projects

Certified Research and Development Projects [2006 - 2012]		
• Product Quality	42	Baht 32,676,366 worth
• Process Improvement	40	Baht 28,938,880 worth
Overall	82	Baht 61,615,346 worth

Moreover, apart from making internal researches, in 2012, SSI continuously collaborated with Synchrotron Light Research Institute (Public) Organization, according to Memorandum of Understanding of Metallurgy and Materials, to research steel in 3 main topics as follows:

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

In addition, SSI has purchased and generated tools to enhance its potentiality in research and development. In 2012, the Company has launched Forming Limit Diagram Test Machine (FLD) which was a direct evaluation tool to test forming limit diagram and was used for testing forming limit diagram, developing and choosing products for customers.

3. Research Dissemination for the Development of the Country

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

The 6th Thailand's Conference on Metallurgy

This conference, hosted by Chiang Mai University, was held in Thailand on 19 - 20 January 2012. Three research studies from SSI were selected to present at the conference, including:

1. A study of "Influence of cooling rate on the microstructure and mechanical properties of low carbon hot-rolled steel" was aimed to study and develop High Strength HRC.

2. A study of "Effect of boron on forming limit curve of low carbon steel" was aimed to study and develop Low Carbon Steel.

4. Innovative Products Accredited by World-Class Accredited Organizations

1. Develop and distribute High grade Steel for automotive industry with the requirement of Tensile at least 270 and 440 Mpa.

2. Develop and distribute SuperFlat HRC with thickness lower than 2.0 mm.

3. Develop and distribute Innovated Value Products (IVP) according to specific need of customers (You+).

4. Develop production process which provide effective distribution within 15 days after receiving an order (Speed+).

In 2012, SSI distributed 308,450 tons of Innovated Value Products (IVP) or 14% of total sales to the customers.





Rewards

Sahaviriya Steel Industries Public Company Limited (SSI) aimed at operating with its full effort under support from the management team and all staff in order to achieve the vision to innovate premium value steel products and services for customers; generate consistent profit and sustainable value for stakeholders. As a result of this, the Company has continuously received honourable awards as follows:

- National Outstanding Industrial Establishment Award in Labour Welfare/Relations 2012 (10 consecutive years).
- Outstanding Award for Safety, Occupational Health and Work Environment 2012 (1 consecutive year).
- Honourable certificate for Excellent Cooperative Governance 2012.
- The Prime Minister Trophy for Safety Clip VDO Competition winning.





Business Ethics

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

1. Shareholders

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

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

2. Customers

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

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

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

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

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

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

3. Business Partners

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

1. Not to demand, take or gain any profit from customers.
2. In case of any information about wrong-doing demanding, taking or gaining any profit relating to business partners, the incident must be revealed and the problem solved by working together in due course.
3. Strictly adhere to the conditions according to the agreements. In case of inability to follow any condition, business partners must be informed promptly and in advance in order to find a solution together.

4. Business Competitors

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

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

5. Staff

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

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

6. Regulators

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

7. Society and Community

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





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