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Sustainable Development Report 2019

Sahaviriya Steel Industries Public Company Limited

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Vision

Leading Innovative and Reliable Steel Company

Mission

Innovate premium value steel product,
service and market for customers and consumers;
create sustainable shared value and trust for stakeholders

Values

Fighting spirit

Never give up

can change

Be the leader of change

service-mind

Deliver more than expected

iFacts

integrity

We do what we say

aim for excellence

Anything is possible

teamwork

One for all, all for one

Message from the Group CEO and President



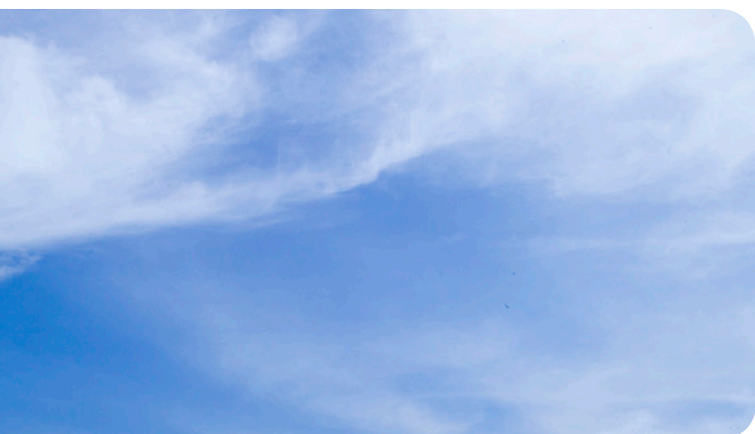
Dear All Stakeholders,

Sahaviriya Steel Industries Public Company Limited or SSI engages in business of hot-rolled steel sheet in coils and the related businesses by focusing on innovation of high quality steel sheet products to support the increased demand of steel in the region for the automobile, energy, transportation and construction industries as well as joint venture in continued projects, such as downstream steel business, marine business and engineering services business. Thus, SSI's business operations are associated with the stakeholders and usage of natural resources throughout value chains from upstream to downstream. We, therefore, constantly strive to operate businesses with social responsibility and environment alongside with creation of innovation for steel products and special value-added services for customers and consumers, to create shared value and sustainable confidence for the stakeholders.

Significant Sustainability Performance in 2019

Environment, Safety and Occupational Health

It is a very great pleasure to witness outcomes from our dedication from pursuing various measures, such as the volunteer spirit to cultivate discipline, safety culture & environment project and the training on safety, occupational health and working environment trainings to keep the employees at all levels educating about occupational hazard sources including the hazards preventive and control guidelines which yield a very satisfactorily result. That is, our record on Lost Time Injury Frequency Rates (LTIFR) or the number of lost time injuries occurring in workplace per million hours worked in 2019 was Zero, decreasing from 0.31 in 2018. This is the best statistic ever since the 25 years of the establishment of the plant and none of our employee were exposed to occupational illness at all. In addition, our environmental performance exceeded the standards required by the laws.





Economic

In 2019, the Company's business activities created economic values to the country, in product levels, value chain levels and local community levels.

1. We supplied Premium Value Products (PVPs) to customers totaling 785,362 tons, accounting for 59% of total sales, an increase of 7% compared with the previous year. These products did not only generate high revenue to the Company as differences in prices were rather high, but they also led to worthiness utilization of resources which were raw materials and added values and competitive edge for our customers.

2. In 2019, the amount that the Company procured from general vendors worth approximately Baht 3,340 million. Such amount could generate benefits to 424 businesses, community enterprises and career groups in Bangsaphan District, by purchasing products and services worth Baht 290 million.

3. SSI Group employed totaled 2,814 employees where 2,134 employees worked at Bangsaphan Plant (1,613 employees or 75% have domicile in Prachuap Khiri Khan Province) and hired 459 outsourcing employees.

Social

The Company undertook several social activities and community development projects which focused on 4 main areas, i.e. household economics and career; education and youth; environmental quality development and volunteering cultural development. There were 41 projects operated with 16,102 stakeholders gaining benefits from these activities.

1. Social activities

Thailand Kon Lhek Mini Marathon 2019, a collaborative project with Thai steel partners, could raise funds without deduction of expenses of Baht 2.3 million to support organizations for the underprivileged. Total funds raised by this event during the 12 year period have been more than Baht 29 million.

2. Community development projects

2.1 Household economics and career promotion

Presently, the 18 community bank projects established by the communities with the supports from the Company became important foundation of the community economics. As of 31 December 2019, total funds amounting to Baht 38.3 million and 3,487 project members could enjoy the benefits.

2.2 Education and youth

Technician Development for Steel Industries Project, a collaborative project between Sahaviriya Group and Bangsaphan Industrial and Community Education College could help the local youth to have qualified education institutes and curriculum as well as could allow the Company to have more access to skilled workers. At present, there were 669 students across 12 classes graduated from this project. Out of these numbers, there are 185 persons working with Sahaviriya Group.

Sahaviriya Funds for Bangsaphan Educational Development Project. In 2019, all 10 schools participated in this project passed the strict supervision and evaluation criteria as per the specified plan.

2.3 Environmental quality development

SSI has collaborated with relevant agencies to undertake various environmental quality awareness promotions and campaigns on continued basis – by putting emphasis on circular economy, e.g. project to promote waste separation, both factory waste and community waste, SSI Beach Clean-up Activity, Two-wheels Preserve Bangsaphan Project, and Youth Conservation Camp. There were 2,353 people participating in these activities.

2.4 Volunteering cultural development

In 2019, SSI staff in collaboration with the community people arranged 22 SSI Volunteer Activities. There were totally 1,025 SSI staff participating in, or accounting for 8,104 volunteering service hours and there were 2,552 local people in the communities participating in volunteering community development activities, or accounting for 20,336 volunteer service hours.

Sustainability Awards

SSI received several awards, such as Bronze-Level Honorable Award on Zero Accident Campaign 2019; Outstanding Designated Factory in Labor Relations and Labor Welfares for 15 consecutive years (2006 - 2019), Certificate on Prevention and Solution to Drug Problems in an Establishment, under the White Factory Program.

We are delightful that sustainable development activities received a lot of cooperation and they have been communicated to the stakeholders in this 2019 Sustainability Report. Those works reflect strong determination of SSI in building positive values and impacts for business and society. We will keep on moving forward with sustainability projects to respond to the “Sustainable Development” agenda of the United Nations and its Sustainable Development Goals. There will be critical changes that the world may have to encounter, so we still need collaboration from all stakeholders to cope with such changes.



Mr. Win Viriyaprapaikit
Group CEO and President

SSI and SDGs



Sahaviriya Steel Industries Public Company Limited determines to develop business by means of value added creation and enhancement of value throughout business chains for the growth of overall economic system, generation of investment, expansion of employment and tax payment for development of the country which can lead to better quality of life and well-being of the people on sustainable basis. In addition, our development is corresponding to Sustainable Development Goals (SDGs) of the United Nations which has been announced as global development agenda for the period of 2015 - 2030.



Environmental Management

1. Observe ISO 14001 Environmental Management Standards
2. Promote energy conservation
3. Encourage for environmental friendly procurement
4. Climate change management
5. Preserve community environment through environmental projects



Create shared value with customers and trade partners

1. Encourage development of innovative products and services which can add value to customers continually.
2. Purchase products and service from local communities.
3. Develop research works to build knowledge to industries.



Occupational Health and Safety Management

1. Promote occupational health, safety and working environment through Zero Accident Campaign and Behavior Based Safety (BBS).
2. Manage and prepare readiness for emergency response.
3. Safety management on transportation of raw materials and products.



Equitable Treatment

1. Treat trade partners-competitors equitably by complying with laws and regulations of public sectors.
2. Support government sectors on overseeing free trade fairly.
3. Support anti-corruption policy of the Company and become member of Thailand's Private Sector Collective Action Against Corruption (CAC).



Personnel Development and Human Rights

1. Define employment structure, compensation & welfare and skill/knowledge development continually.
2. Promote for Work Life Balance.
3. Non-discrimination on employee recruitment.
4. Oversee safety, occupational health and environmental condition of employees.



Community and Social Development

1. Promote money savings to communities located in areas where business is situated.
2. Encourage people and youth to learn about knowledge and skills on business operation and career development to generate income.
3. Support quality of life development of communities through sustainable activities and projects.
4. Emphasize on employment of local people, support family institution and minimize migration.

Corporate Information

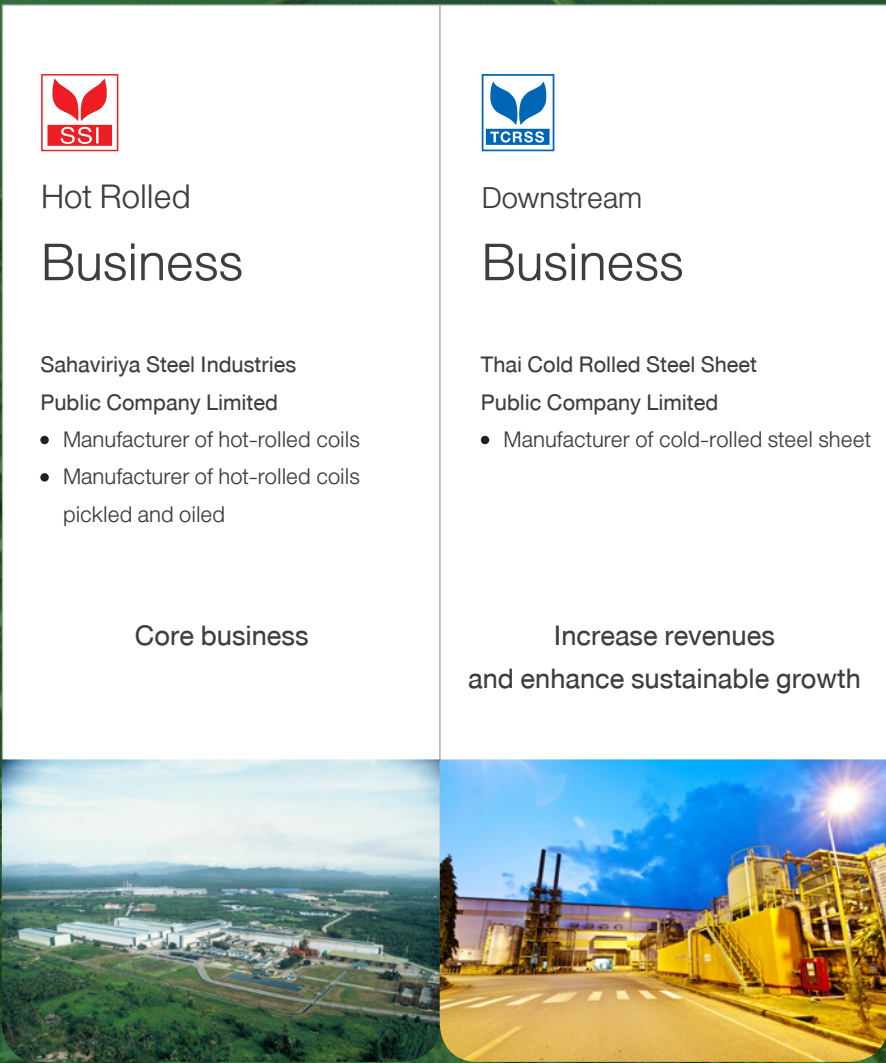
Sahaviriya Steel Industries Public Company Limited or SSI is Southeast Asia's largest producer of hot rolled steel sheet in coils (HRC), with 4 million tons annual capacity. SSI endeavors to supply premium-grade steel sheets to cater for the region's growing demand in various sectors such as automobile, energy, transportation and construction sectors. SSI has investments in joint-venture downstream plants, namely 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 on a large 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 - "Leading Innovative and Reliable Steel Company", and mission "Innovate premium value steel product, service and market for customers, create sustainable shared value and trust for stakeholders".



For more information, please visit
<http://www.ssi-steel.com>

SSI Group Structure

35.19%



37%

15%

66%



Downstream Business

Thai Coated Steel Sheet
Company Limited

- Manufacturer of electro-galvanised steel sheet

Increase revenues
and enhance sustainable growth



Port Business

Prachuap Port Company Limited

- Provider of deep-sea port

Reduce costs
and increase revenues



Engineering Business

West Coast Engineering
Company Limited

- Provider of engineering and maintenance services

Reduce costs
and increase revenues



SSI Sustainability Management



SSI realise that good employees are the main reason for an organisation's success.

For this reason, we take care to hire only the best to work with us, and provide fair and attractive remuneration packages that include constant training and education.

Sustainability Concepts and Policies

Sahaviriya Steel Industries Public Company Limited, or SSI, implemented Sustainability policies based on its business philosophy and business ethics that have been molded in the way of a pushing forward, driving as well as sustainable development and growth.

Business Philosophies

1. Devotion to Excellence

SSI is determined to do all we can to continuously improve ourselves and our operations. Through study, research, development, and upgrading, we aim for the highest we can attain. This effort to develop and break new records of excellence must be perpetual in all aspects of our operations.

2. Adherence to Quality of Products and Services

SSI's products and services are all designed with the best interests and satisfaction of the customer in mind. We believe that our customers will always be willing to pay for the best, and that no improvement is of any use if it does not meet our customers' needs.

3. Belief in the Value of Our Personnel

SSI realise that good employees are the main reason for an organisation's success. For this reason, we take care to hire only the best to work with us, and provide fair and attractive remuneration packages that include constant training and education. Quality of life for our employees is paramount; their occupational health and safety are assured.

4. Commitment to Honesty and Ethics

SSI is fully resolved to conduct our business honestly and ethically. We believe that honesty and ethics in business bring good order to society and progress to the nation, and assure long-term prosperity in commercial dealings, for that reason we ethically conduct our business with all stakeholders, including shareholders, investors, customers, business partners, creditors, competitors, employees, the local community, and society in general.

5. Dedication to Our Social and Environmental Responsibilities

SSI firmly believes that we are part of society. Any change in society is certain to affect our business. We are convinced that business and society must all be developed in concert to ensure a sustainably successful enterprise. Our responsibility, therefore, is to take part in continual maintaining, developing and conserving of a good natural and social environment.

Business Ethics of the Company

In conducting the business, the Company adheres to the principles of accountability, transparency, integrity, and business competitiveness by acting in the best interest to all stakeholders in an equitable manner.

1. Shareholders

The Company realises the shareholders are the owners of the Company and the Company has the duty to generate value-added to the shareholders in a long term. The Company has, therefore, stipulated a guideline for the directors, executive, and employees to perform the followings:

- 1) Perform duties to the fullest capacity with integrity, care, prudence and fair treatment for the best interest of all shareholders
- 2) Present the operating performance report, financial status report and other reports with accuracy and completeness and in a timely manner
- 3) Report a trend of the Company, both on the positive and negative sides, to all shareholders in an equitable manner based upon sufficient factual basis, quantitative information and rationale.
- 4) Ensure that there is no exploitation of undisclosed information or any wrongful action for improper advantage for oneself, or others, which may cause conflict of interest for the Company.

2. Customers

The Company values the vital role and satisfaction of customers which contribute to success of the Company's businesses. Therefore, the Company has a strong intention to pursue the methods that are reliable to customers and can fulfill the needs of customers in a more efficient and effective manner. The guidelines are as follows:

- 1) Deliver quality products and services that meet or exceed the expectation of customers
- 2) Communicate with customers with courtesy and ensure that complete, accurate and up to date information of products and services is given to the customers. The Company will not misrepresent the products and services in terms of quality, quantity or any other conditions.
- 3) Strictly follow the conditions applied to the customers. In case the conditions cannot be satisfied, the Company will inform the customers without delay to figure out a possible solution together.
- 4) Establish a system and channel that allows customers to make complaints about quality, quantity and safety of products and service, and respond to the complaints in a timely manner.
- 5) Strictly protect confidential information of customers and will not use the information for other interests in an improper respect.
- 6) Provide instructions on the use of products and services in an efficient manner to maximise benefits.

3. Suppliers

The Company realises that ethical conduct with suppliers should be based on fair benefits to both parties. Thus, the Company commits to provide facts and accurate reports, implements according to agreements, negotiates and seeks solutions based on business relationship as well as avoids the situation which will result in a conflict of interest. The guidelines are as follows:

- 1) Never request, receive or pay any fraudulent benefits from and to suppliers
- 2) With an evidence indicating a fraudulent benefit has been claimed, received or paid, disclose such relevant information to the suppliers and together figure out the solution in a timely manner
- 3) Strictly perform in accordance with the conditions under the agreements and inform the suppliers in advance in case of inability to meet any condition

4. Competitors

The Company realises the commitment to treat its competitors fairly. The guidelines are as follows:

- 1) Never seek any confidential information of the competitors by unfaithful or improper means
- 2) Never destroy the competitors' reputation by offensive accusations.

5. Employees

The Company realises that employees are valuable resources for the success of the Company; thus the employees are treated fairly in terms of compensation, opportunity and development, and potential based on humanity practices regardless of their race, religion, gender or physical condition. The guidelines are as follows:

- 1) Treat employees with respect to individual value and dignity
- 2) Provide fair compensation to employees
- 3) Provide a safe working environment to employees considering their lives and properties at all times
- 4) Appoint, rotate, promote and demote employees with sincerity and based on knowledge, merit and suitability
- 5) Value development of knowledge and ability of all employees
- 6) Avoid any unfair action which may affect the job security of the employees or any action which may threaten or cause pressure to mental health of employees

6. Supervisory Authorities

The Company values its duty to comply with law and business practices. The Company strictly conducts the business under laws, articles, regulations and standards imposed by supervisory authorities as well as cooperate with supervisory authorities in relevant matters.

7. Society and Community

The Company recognises accountabilities towards society and community as the core of business, with full realisation of the possible effect on natural resources and the environment. It has constantly provided support to a number of activities to improve society and community, safeguard and rejuvenate natural resources as well as to enhance the community capacities in an effort to bring about sustainable development.

The Company establishes a concept for Sustainability operation and communication guidance as follows:

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SD Management System

The Company has established the SD Management Committee, which consists of executives from each division. Their duties and responsibilities are to implement and follow up on the SD plan ensuring it to be in line with relevant policies. In addition they allocate the resources necessary for SD operation and promote the work of the SD Management Sub-Committee, which the Committee proposed to the President for appointment. The objectives of the Sub-Committee and scope of their responsibility is to support the work of SD Committee.

The Committee reports its SD operating result to the Good Corporate Governance Committee (CG) quarterly. The duties and responsibilities of CG Committee are to provide an opinion to the management regarding SD and to monitor them in establishing a clear action plan. Furthermore they follow up on the implementation of the management plan and then submit the results to the Board of Directors.

SSI SD Management System Structure



SSI SD Framework



Economic Performance



Economic Overview

The global economy in year 2019 confronted several uncertainties from trade war and BREXIT, though there were some reliefs at the end of the year. Major economies were fragile especially in the industrial sector with demand expanded at low level. Economic growth in USA was lower than the previous year while FED announced interest rate cut for 3 times during the year. The Eurozone had been affected by the uncertainty of BREXIT, resulting in a decrease in the consumer confidence index and the lowest growth in the last 3 years. In Asia, Japan economy, unlike the others, improved from its export recovery while China's economic growth was at the lowest level in 29 years due to the decline in service sector, industrial sector and agriculture, forestry, livestock and fishery sectors. New industrialised countries, including South Korea, Taiwan, Singapore, and Hong Kong, experienced a decline in economic growth, especially, Hong Kong which has been affected by the prolonged protest in the country while the economies of most ASEAN countries slightly slowed down.

For Thailand's economy, Office of the National Economic and Department Board (NESDB) announced that the domestic economy dropped from 4.2% in 2018 to 2.4% in 2019 due to the decline in industrial and export sectors following the global economic slowdown though the private consumption and investment as well as tourism sectors were improved.

From the slower global economic growth and risks arisen from the world trade and economic impacts, several countries have launched policies to mitigate such external factors that might affect the whole countries and/or businesses in private sectors. The Company is aware of the factors that may arise and has impact to the business operation. Therefore, it has been closely monitoring and implementing strategic plans for appropriate business management as follows:

Marketing Strategy

The Company cautiously manages the procurement of raw material in order to get satisfied spread between selling price and raw material price with an adequate quantity. It established a “Gold Partnership” Program to reduce the risk in a sluggish market and using proper sales policy for each customer. The Company has closely monitored domestic and overseas markets in order to analyse and consider product sales to be in line with the order and import of slabs from foreign countries as well as seeking new sources of raw material to obtain high quality, low cost, adequate quantity with short delivery time. In addition, production plan has been managed in cooperation with sales projection for shorten delivery lead time. The Company also closely monitors on dumping situation of imported products in order to take proper and timely actions and emphasises on the Innovated Premium Value Products for particular applications such as construction, machine parts, etc.

Production Strategy

The Company has improved the production process, reviewed the inventory management plan, and introduced new technologies to enhance the efficiency of quality control and the accuracy of production process leading to a significant reduction of inferior goods. The Company has also obtained an automatic system to be used in product quality management to accommodate the ability to meet the customer requirements, reduce human errors and improve product quality consistency. Moreover, the Company established a working group for production process development aiming to figure out solutions for particular problems. The working group is responsible for analysis, improvement planning and implementation of existing and new projects to increase efficiency and reduce production cost as well as improve product quality.

In addition, the Company has prepared its personnel with necessary equipment to respond to emergencies including insurances covering property damages, damages to goods and products from the emergency incidents as well as business interruption caused by natural disasters. The Company has operated in accordance to ISO 14001:2015 standard and continuously monitor changes of environmental related laws.



Financial Strategy

1. Exchange Rate Management

The Company was granted credit line for forward contract used for raw material purchase after it had been suspended since entering the Business Rehabilitation. In addition, Foreign Currency Deposit (FCD) account has been opened for its foreign currency balance.

2. Trade Credit Management

The Company has emphasised on the quality of trade credit, efficient control of debt collection, a good internal control system, and a strict credit policy. The Company has also reviewed credit granted to customers and credit approval authority to establish the consistent trade credit standards and control the non-performing credit to the level that will not impact on the Company's performance in overall. In addition, the Company has closely monitored outstanding overdue debt by joint planning payment schedule and establishing a credit policy in repaying overdue debt (if any) before delivering new products to customers.

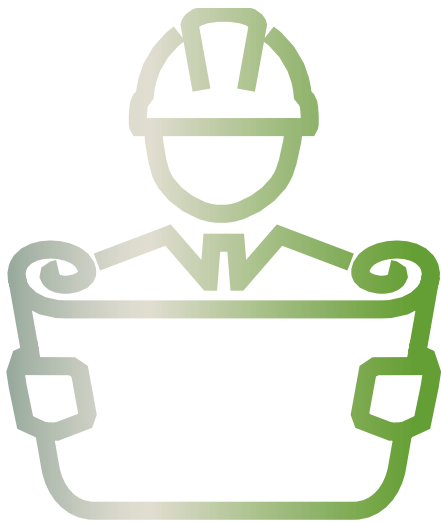
3. Liquidity Management

The Company has closely monitored its working capital through regular projection on cash inflow and cash outflow in order to be aware of future liquidity requirements and have sufficient preparation time for liquidity solving. The Company continues to manage and prioritise on sales and product innovation for premium value, conducts cost reduction in production and reduces other expenses. Moreover, monthly meetings are held regularly with the creditor committee to monitor the implementation of the Plan and cash monitoring agent monitors the Company's cash flow to ensure the Company's proper cash management.

Economic Performance

Transactions	2018 (Restated)	2019	% Change (YOY)
Sales and Service Revenues	31,428	25,199	-20%
Group Sales Volume (MT)	1,441	1,270	-12%
EBITDA	1,441	(1,254)	-187%
Net Profit (Loss)	867	(1,803)	-308%

Occupational Health, Safety and Environmental Management



Sahaviriya Steel Industries Public Company Limited (SSI) operates business by observing philosophy and business ethics by believing in value of their staffs, ensuring that they will have good quality of life with safety and healthy working conditions as well as adhering to social and environmental responsibility. The Company believes that occupational health, safety and environmental management system is very crucial for its business operations. Hence, the Company intends to undertake appropriated occupational health, safety and environmental management system on continued basis by emphasising on constant development and improvement to ensure that they conform to the relevant standards specified.

In 2019,
LTIFR per one million
working hours of SSI

is

0

, which is the best statistic since
the plant has been constructed

for
25

years

Occupational Health, Safety and Working Environment Management

The Company also determines to build up awareness on occupational health, safety and working environment including sustainable development to protect its employees and contractors working in the SSI Bangsaphan Steelworks area from occupational diseases and injuries, and all employees can be safe, with regards to operations and health and sanitation by complying with Occupational Health and Safety Management Standards (ISO 45001). Objectives are to provide employees with better physical and mental health, without any occupational related diseases and to make them feel confidence in the occupational health, safety and working environment management system of the organisation.

Performance on Occupational Health and Safety

The Company emphasises on operation and development of its occupational health, safety and working environment with aims to make its employees realise and put emphasis on taking care of themselves and their colleagues so they can work safely without having occupational accidents through various projects, such as Zero Accident Campaign, Behaviour Based Safety (BBS) Project, Safety Patrol and employee health surveillance from exposure of operational risks. The Occupational Health, Safety and Working Environment Committee had been established to supervise, monitor and provide guidelines to improve safety in all of the plant areas with active support from all departments by determining to find measures to minimise the Lost Time Injury Frequency Rate (LTIFR) per one million hour worked to make it closest to zero or zero and without occupational related diseases on continued basis.

In 2019, LTIFR per one million working hours of SSI is 0, which is the best statistic since the plant has been constructed for 25 years. In overall, LTIFR of the SSI Group is 0.77 which increased from last year which was at 0.56 due to the increased LTIFR of West Coast Engineering Company Limited (WCE) because its employees were still lack of understanding of job safety analysis and its risk prevention measures did not cover all areas. In 2020, safety plans have been arranged to solve such problems, such as arrangement of Job Safety Analysis (JSA) trainings to all employees (100%), establishing reward and punishment measures according to the safety-driven plan as well as implementation of KPI to make the employees place more importance on safe working.

Lost Time Injury Frequency Rate (LTIFR) per Million Hour Worked of SSI Group

Company	2017	2018	2019
SSI	0.66	0.31	0.00
TCRSS	0.00	0.00	0.00
WCE	0.00	1.86	2.58
PPC	3.71	0.00	0.00
SSI Group	0.46	0.56	0.77

LTIFR (Lost Time Injury Frequency Rate) = (Number of lost time injuries in accounting period) / (Total hours worked in accounting period) x 1,000,000

* Data as of 31 December 2019.

Occupational Health, Safety and Environmental Trainings

Occupational health, safety and working environment trainings are important keys to reduce accidents and occupational diseases. SSI has continuously improved occupational health, safety and working environment training courses for its staff at all levels including new employees, rotated employees and promotion employees before commencing the work to keep them informed about hazard source, including hazard prevention and control guidelines. On-the-Job Training has also been provided to the Company's employees, sub-contractors and outsourcing employees. Certain trainings are compulsorily provided for some types of positions. The Company also invited external experts with various specific fields to provide additional training courses to broaden the employees' vision and knowledge, apart from the lessons learnt inside the Company.

In addition, Training Matrix has been arranged and classified in the annual training plan pursuant to safety standard, related operational risks and relevant safety laws. This plan required each employee's department evaluate nature of activity/work and working environment of the employees and information obtained shall be sent to the safety responsible agencies to review various risk factors to be used as guideline on allocation of employees who need to be trained in certain courses and appropriateness on refreshment of the courses specified. In 2019, SSI intensified this awareness by arrangement of 44 occupational health, safety and working environment training courses, which increased from 34 trainings arranged in 2018. Furthermore, operating standards of all activities have also been reviewed to ensure that they are up-to-date, practical and can keep risks under control.

Emergency Preparedness and Fire Protection

The Company has managed and prepared readiness on emergency response plan to cope with emergency situations, such as fire, chemical leaks, abnormal condition of boiler or oxygen tank, floods, and etc. The Company appointed an emergency response and fire protection subcommittee as the main body responsible for overseeing readiness of staff in terms of adequacy and potential by providing trainings so that they can suppress emergency incident in timely manner and minimise severity of incident including preparation of readiness of equipment for emergency response. Equipment and tools have always been inspected and maintained to keep them in good condition and are available to be used at all times. Additional fire prevention equipment has been installed in fire risky areas and new technologies are also considered to be employed to improve fire protection procedures. As one of precaution measures, drill and simulation in areas which are prone to have emergency situation are conducted on continued basis.

Moreover, SSI has effected an insurance policy with comprehensive coverage of natural disasters including hurricanes, floods, tsunamis, lightning, landslides, and earthquakes. The insurance provides coverage for the loss of or damage to property and stock as well as business interruption resulting from such incidents and damage due to the fire-risks in all cases.

In 2019, the Company organised 18 emergency drills in all areas. At present, approximately 60% of SSI staffs have attended basic fire-fighting training courses in accordance with the law. The Company also assigned the employees who are appointed to be the fire-fighting team of the plant sites to attend the technical fire-fighting training, advanced fire-fighting training and fire command training courses. Moreover, risky areas and readiness of emergency suppression equipment are constantly inspected to ensure that the installed fire prevention and suppression system are completely and available for usage. In 2019, there was not any emergency situation but the Company still strictly kept on preparing readiness on emergency response continually.

Safety Management on Raw Materials and Products Transportation

SSI placed importance on safety management on raw materials and products transportation. Performance of the Cargo Transportation Control Working Group of Sahaviriya Group has been followed-up via the Community Leadership Steering Council and Sahaviriya Group's 24 hours Complaint Center. Feedback and complaint will be gathered for improvement. In addition, the Cargo Operation Control Center was set up as a hub to monitor the freight logistic trucks from point of departure to destination, and to receive complaints and suggestions from stakeholders.

In the meantime, various measures have been implemented to control operations of transportation trucks, for instance checking their routes and speed limit in Bangsaphan areas via GPS system 24 hours a day, increasing the number of drivers and limiting their working hours so they can have more resting time, randomly checking their traffic compliance by using CCTV cameras installed in 14 points in the community areas and randomly inspection by the safety inspector patrolling in the community areas. In 2019, 4,124 transportation trips have been randomly inspected by safety inspectors and results showed that there was zero severe offense of safely rules. However, the number of general offenses, for instance, keeping 50 metres space while waiting for red traffic light at the intersection and the curve, where the speed of the truck has to be slowed down or to stop, had decreased from 190 counts in the year 2018 to 61 counts in 2019. This was the result from implementation of Truck Control Station Project by Sahaviriya Group's Cargo Transportation Truck Control Working Group in 2019 to control the release time of cargo transportation trucks to prevent violation of traffic rules.

Random Traffic Compliance Check for Sahaviriya Group Cargo in 2019 in Bangsaphan District by the Safety Inspectors

Details	2017	2018	2019
Number of trips	37,488	55,551	50,452
Number of trips randomly checked by safety inspectors	4,436	4,455	4,124
Number of Type 2 offense (General Offense)	32	190	61
Number of Type 1 offense (Severe Offense)	0	0	0

Based on results of such inspection, Sahaviriya Group's Cargo Transportation Control Working Group has implemented a Truck Control Station project in 2019 to control the release time of cargo transportation trucks and to prevent violation of traffic rules.

Environmental Management

SSI realises that the steel industry plays a part in contributing to the national development and it requires to use natural resources for its production process, therefore SSI has continued focusing on environmental management for sustainable development by strictly adhering to relevant laws of the public sectors and environmental laws, for instance study and preparation of environmental impact assessment report, compliance with preventive, corrective and reduction measures on environmental impact from steel production process including implementation of environmental quality inspection and monitoring measures. SSI also adopted and complied with the ISO 14001 Environmental Management System since 1999 and it has been continuously certified.

The main task lies with the Safety, Environment and Plant Integrity Management Office which works in co-operation with other production units in the plant site. The environmental managers, supervisors and operators in charge of the management and control of water, air pollution and waste systems have been fully appointed pursuant to the law. For operations outside the plant, the Company jointly cooperates with other companies in Sahaviriya Group in Bangsaphan District to promote environmental awareness consciousness and collaboration between the communities and the plant via various activities throughout the year.

Raw Materials and Products Management

SSI imports steel slabs as raw materials from several sources in foreign countries where quality of raw materials have been controlled to keep them corresponding to standards and meeting the customer's products demand. In 2019, the Company produced 1.27 million tons of hot-rolled steel sheets and 0.165 million tons of hot-rolled steel pickled and oiled sheets.

Energy Management

SSI realises the importance of energy conservation as it is a main factor for steel production and it will have direct effect on global climate change. Therefore, the Company has set up efficient energy management systems to control and optimise usage of energy in the organisation. The Energy Management Working Group including the environmental and energy experts work together and act as a center to manage energy conservation via the Cross Functional Teams. Their works performed included constantly implementation of energy saving measures, both concerning with direct production process systems and the production supporting systems, such as steel furnace system, motor driving systems, lighting systems, compressed air systems and air conditioning systems, etc. Thus, in order to upgrade the energy management to the international level, SSI started to implement the ISO 5001:2018 Energy Management Systems to make SSI able to improve energy capability continually, reduce energy cost and promote for concrete participation on energy saving. Apart from energy conservation within the organisation, SSI also places importance on participation in energy promotion projects of the government agencies on continued basis, such as support the investment projects on replacement and improvement of machinery and equipment for energy conservation in water treatment system of the control plant, the capacity building project of energy personnel pursuant to the law and etc. SSI also opened opportunities to both private and public sector to visit and study about energy work continually every year with aims to exchange and transfer knowledge on energy conservation.

In addition to implementing energy saving measures, SSI also places importance on personnel development by providing ongoing budget support for personnel development, as well as encouraging for employee participation in energy conservation activities which could lead to shared energy saving throughout the organisation.

The Energy Consumption Rate at SSI Bangsaphan Steelworks in 2019

Process	Energy Usage	
	Target	Usage
Hot Rolled Coil Steel Sheets		
• Heat energy (kcal/kg slab)	347.59	362.07
• Electrical energy (kWh/ton)	110.00	120.50
Hot Rolled Steel Pickled and Oiled Sheets		
• Heat energy (kg LPG/ton coil)	3.25	3.58
• Electrical energy (kWh/ton)	18.50	20.80

Actual result of heat and electrical energy used in production of hot rolled coils steel sheets was not as per the target because actual production volume and ratio of dual furnace production model was below target and also due to external factor, for instance, number of outages of high voltage power system were higher when compared with 2018, which led to the increased loss of energy in the production process. Actual results on heat and electrical energy used in hot rolled steel pickled and oiled sheets production line was also slightly higher than the target. Actual results on the use of electrical energy are slightly different from the target. In this regard, there is only slightly impact from performance of energy conservation measures during the year towards overall usage of energy when comparing with overall energy consumption of the organisation.



Water Management

In order to manage water usage, the plant uses raw water from the Bangsaphan canal, a huge surface water source which is 13.5 kilometres far from the plant. The water is pumped into 2.4 million cubic metres water reservoir. SSI will not pump water from Bangsaphan Weir during dry season when water level in the weir is below 2.2 meters. The plant is also designed to recycle water in the HRC production. The water consumption management within the plant can make SSI be able to keep on production process without having the problem of competing for water which is a common resource shared by the community and local agricultural sector. In the past year, the Company has managed to strictly adhere to the set standard.

SSI has set up a chemical water treatment system to reduce levels of waste water which occurs in Hot Rolled Steel Pickled and Oiled Sheets production line and set up sedimentation tanks, sand filters and grease tanks in the HRC production line including set up the biological treatment system for waste water from consumption within the plant. The quality of water in all systems is constantly tested by the officials and verified by the outside authorities. The treated water is recycled and some of which is used to water plants, with zero discharge outside the plant.

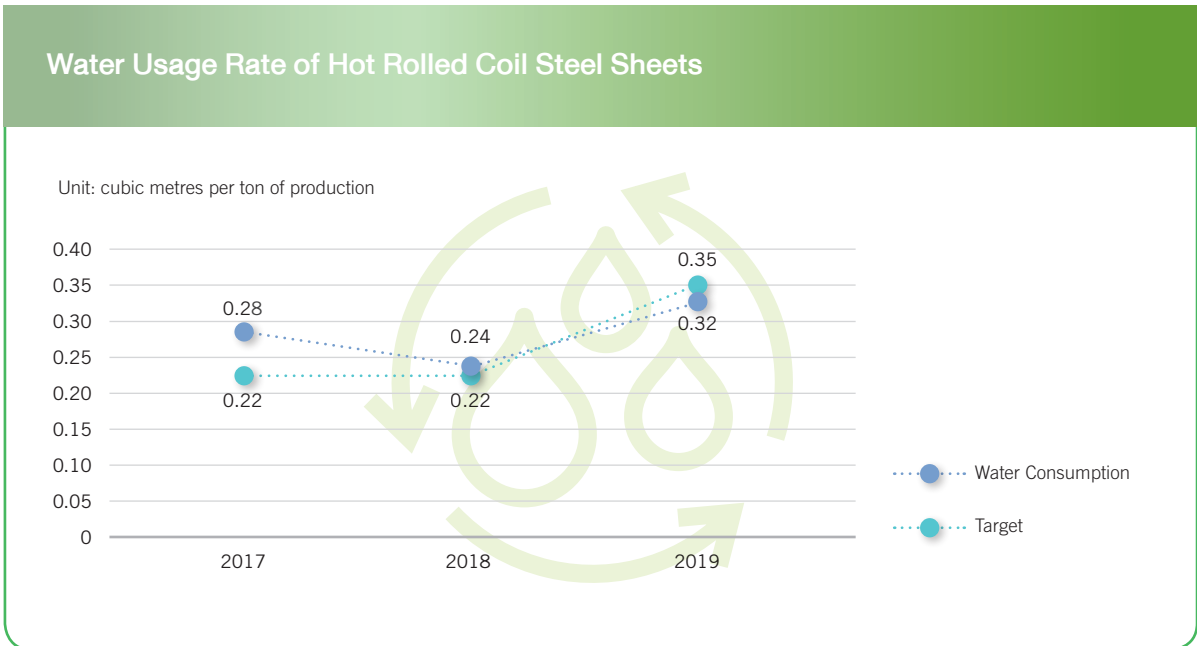
In 2019, amount of water used in SSI Bangsaphan Steel works was 1.15 million cubic meters, consisting of - 1) HRC production line rate of 0.4 million cubic meters; 2) Hot Rolled Steel Pickled and Oiled Sheet production line rate of 0.07 million cubic meters and 3) Consumption water of 0.68 million cubic meters.

Water Usage of SSI Bangsaphan Steelworks

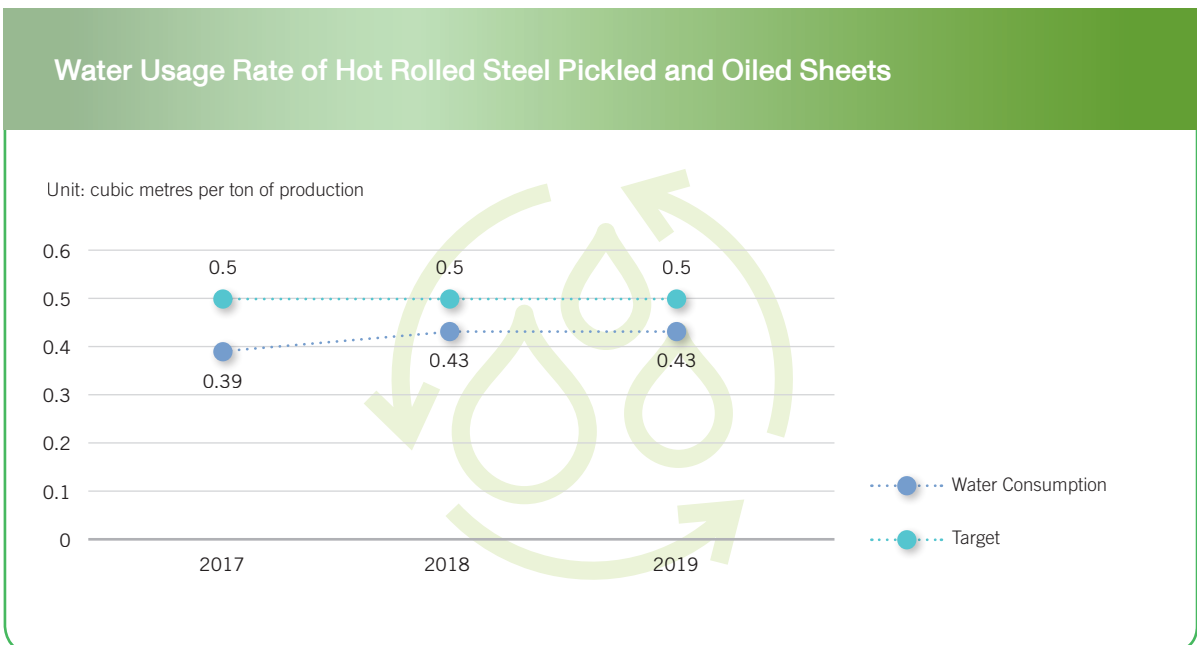
Production Line	Water Usage (million cubic meters)		
	2017	2018	2019
HRC Production Line	0.22	0.36	0.40
Hot Rolled Steel Pickled and Oiled Sheet Production Line	0.05	0.08	0.07
Consumption Water	0.72	0.74	0.68
Total	0.99	1.18	1.15

The Water consumption per ton of production of SSI Bangsaphan Steelworks is as follows:

1. Water consumption of hot-rolled steel sheets Production Line in 2019 was 0.32 cubic metres per ton of production which was slightly better than the target of 0.35 cubic metres per ton of production. In 2019, target has been adjusted due to requirement of quality of products, hence water consumption cycle has been reduced and when compared to 2018, which was at 0.24 cubic metres per ton of production or increased by 33.33%.



2. Water consumption of hot rolled coils steel pickled and oiled sheets production line in 2019 was 0.43 cubic metres per ton of production, which was slightly better than the target of 0.5 cubic metres per ton of production. Water consumption in production line in 2019 was the same rate 2018 which was 0.43 cubic metres per ton of production.



Water Quality Control

Apart from having design process to prevent water discharge outside of the plant (Zero Discharge), SSI also has other water quality control measures within and outside of the plant as follows:

1. Monthly inspection of quality of recycled water at 4 stations carried out by the outside authorised agency approved by the Department of Industrial Works. The outcome proved to be above the waste water standard specified in the Notification of the Ministry of Industry, No. 2 B.E. 2539 (1996).

2. Semiyearly inspection of quality of underground water at 9 stations carried out by the outside authorised agency approved by the Department of Industrial Works. Although Thailand has not yet set the required standard on quality of underground water, SSI maintains vigilance on possible changes and during the past few years and no significant changes have occurred.

3. Semiyearly inspection of quality of surface water in public water resources at 3 stations by the outside authorised agency approved by the Department of Industrial Works in order to ensure that the Company's activities do not affect the environment as detailed in the following chart:

Environmental Performance Index of Surface Water Quality

Index	Unit	Analysis Result						Standard
		Tha Kham Canal		Upper Mae Ramphueng Canal		Lower Mae Ramphueng Canal		
		Feb 2019	Sept 2019	Feb 2019	Sept 2019	Feb 2019	Sept 2019	
pH	-	7.46	7.39	7.55	7.75	7.44	7.19	5.0 - 9.0 ^{1/}
Suspended Solid	mg/l	33.30	11.30	19.00	8.50	23.00	12.00	-
Total Dissolved Solid	mg/l	22,548	4,058	14,422	6,530	22,032	3,072	-
Acidity	mg/l as CaCO ₃	55	33	51	17	67	26	-
Alkalinity	mg/l CaCO ₃	120	107	131	92	133	77	-
COD	mg/l as O ₂	54	102	57	73	51	80	-
Grease & Oil	mg/l	< 2	< 2	< 2	< 2	< 2	< 2	-
Total Coli form Bacteria	MPN/100 ml	380	110	120	410	13	330	No more than 20,000 ^{1/}
Iron	mg/l	0.57	1.50	0.65	0.48	0.57	1.70	-
Manganese	mg/l	0.176	0.248	0.194	0.116	0.143	0.264	No more than 1.0 ^{1/}

Note:

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

Measured/analysed/controlled by	S.P.S. Consulting Service Co., Ltd.
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Examined/controlled by	Ms. Atchara Chaiyao (๓-011-๙-7116)
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Usage of Chemicals

Water production systems for HRC production and Hot-Rolled Coils Pickled and Oiled production require several types of chemicals. In the past year, SSI did not introduce new types of chemicals or increase the rate of chemical usage in production. Moreover, according to ISO 14001 and TIS/OHSAS 18001 evaluation, chemical usage management in the plant is in accordance with the set standard. Suggestions for improvement received have already been included in the implementation plan.

Green Procurement

In 2019, SSI procured supplies from 7 eco-friendly product groups, certified by the Thailand Environment Institute (TEI) which was lower than the target set of 17 groups because the users have not yet required to use products under 10 product groups. SSI also supported 3 service providers in energy saving projects as per the plan, for instance, support the energy saving policy by constantly procurement and usage of LED lamp in Bangsaphan Steelworks. Other supports for electrical energy saving project were the installation of Variable Speed Drive (VSD) for 3300 KW Descaling Motor Pump jointly with energy saving product and machinery and equipment improvement project of heat every saving from fuel oil.

In 2020, SSI plans to procure supplies from 10 eco-friendly product groups listed by the Thailand Environmental Institute (TEI) and plans to support service providers in energy saving for 3 more projects.

Eco-friendly Purchasing of SSI Group

Purchasing Year / Type of Product	2017	2018	2019
Products certified by Thailand Environment Institute and are used in SSI Bangsaphan Steelworks	15	15	7
Products in Energy Saving Project	8	3	3

Biodiversity

Sahaviriya Steel Industries Public Company Limited (SSI) in co-operation with Sahaviriya Steel Group at Bangsaphan have carried out a survey project on the biodiversity in the surrounding areas of Sahaviriya Steel Group which is the key indicator of the abundance of the eco-system in areas around SSI plant in Bangsaphan District as follows:

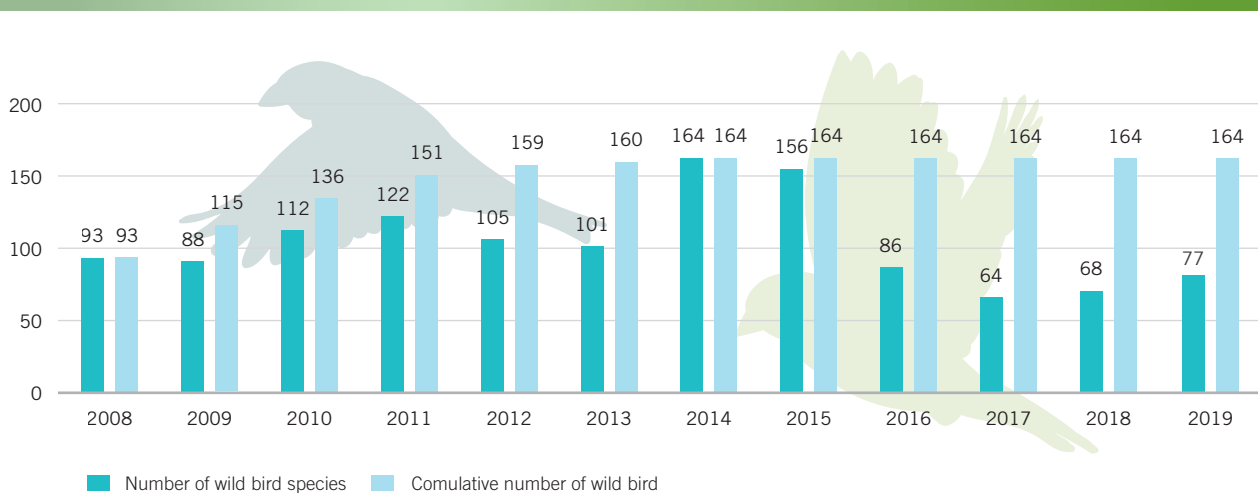
The Environmental Monitoring Project on Biological Resources

With the commitment in performing the business in accordance with eco-friendly industry, SSI has been conducted to survey the diversity of life in the natural areas near the SSI Group's plant areas, such as Samad-Rub-Peek-Nok Forest, Thung Lan Khwai, Nok-Ka-Rean Field, Mae Ramphueng Mangrove Forest, Pa Klang Aow Natural Park. The environmental monitoring project has been done for 12 years consecutively (2008 - 2019). The monitoring project of impacts on wildlife resources and the quality of the environment in the surrounding areas of Sahaviriya Steel Group has been implemented by specialists from the Department of Zoology Faculty of Science Kasetsart University during September 2019. The survey result showed that there are several types of wildlife animals (especially birds) in the area around the SSI Group plant. 4 types of animal classification, the total 114 species of wildlife animals were found in the area around the SSI Group plant. There were 109 species of wildlife animals were found from direct

sighting, from trace evidence of wild animals and from their voices and 6 species were obtained information from inquiries. They could be classified into 13 species of amphibians, 19 species of reptiles, 77 species of birds and 5 species of mammals. Such amount can be classified by each study area located around SSI Steelwork areas as follows: (1) 69 species in Thung Don Samran Field; (2) 88 species in Thung Lan Khwai Field; (3) 80 specified in Nok-Ka-Rean Field; (4) 40 species in Mae Ramphueng Mangrove Forest; and (5) 58 species in Pa Klang Aow Natural Park.

It can be seen that the forests around Sahaviriya Group's plant are abundant and are a habitat for a wide variety of wildlife. The data reflects that the steel industry and the operation of Sahaviriya Steel Group are considered to be environmentally friendly. In addition, SSI and Sahaviriya Steel Group continuously operate the system in accordance with the company's pollution management standard, which do not affect the livelihood of wildlife living in natural areas around the plant. It also protects the natural conditions and restores biodiversity to sustain the natural resources for the local community.

Species of Wild Birds Found in Bangsaphan District



Climate Change Management

SSI is committed to manage greenhouse gases emitted by the Company's activities by setting up strategy, policy and goal to decrease the greenhouse gas emitted and SSI also continually participated in campaigns and activities with the public and governmental sectors in reducing the increase of global warming. The following activities have been undertaken:

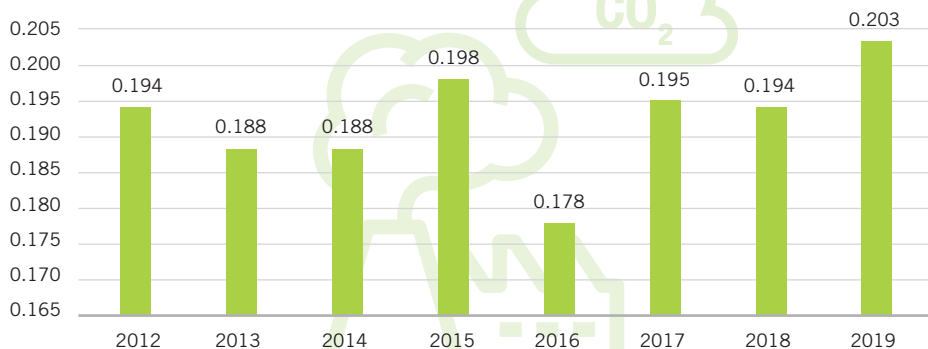
1. Increase the efficiency of energy usage to reduce the greenhouse gas emitted into the atmosphere.
2. Improve the greenhouse gas inventory of its organisation to ensure that they reach standardisation, which include collecting and documenting data, as well as reviewing the greenhouse gas inventory by the outside bodies.
3. Support 3R activities which aim to reduce waste from production process. In 2010, 100% of waste could be recycled and reused.
4. Support the natural resources and environmental conservation activities of the local community.
5. Attend seminars on reducing greenhouse gas, organised by the government agencies with aim to achieve low-carbon society.
6. Study about carbon dioxide retention and its usage afterwards.

One of its outstanding works is that SSI has prepared a report on the plant's greenhouse gas emission which was in line with the ISO 14064-1 standard. This report focused on Operational Control, in accordance to its performance, by collecting data on each type of fuel used and on activities causing greenhouse gas. In 2019, the report showed the results of greenhouse gas emission as follows:

1. The greenhouse gas emitted from HRC production in 2019 was 258,351 tons carbon dioxide per HRC ton, decreased by 11.14% compared to 290,735 tons carbon dioxide in 2018 due to the decrease in production. However when considering from the greenhouse gas emission rate per unit of output, it was found that in 2019, it equaled to 0.203 tons of carbon dioxide per HRC ton, increased by 4.6% compared to 2018, which equaled to 0.194 tons of carbon dioxide per HRC ton.

CO₂ Emission from HRC Production

Ton CO₂/Ton HRC



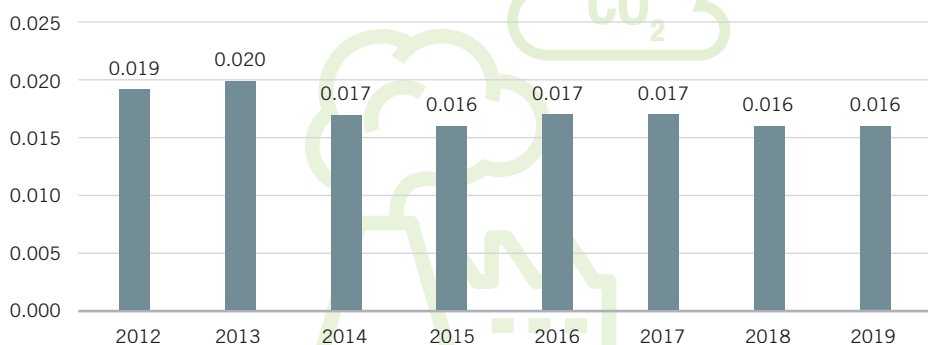


2. The greenhouse gas emission from Hot-Rolled Coils Pickled and Oiled production process in 2019 was 2,674 tons carbon dioxide, while in 2018, the number was 3,145 tons carbon dioxide, or 0.016 tons carbon dioxide per PO Coils ton, equaled to 2018 which was also at 0.016 tons carbon dioxide per PO Coils ton.

SSI's carbon dioxide emission is used as an indicator for GHGs, in order to plan and implement a future project to reduce greenhouse gas emission as well as to study the guideline on its removals. Target from average carbon intensity in the past has been considered to improve and specify short-term and long-term plans, so that it can reflect real results of the greenhouse gas management. Moreover, appropriate indicators have been analyzed and evaluated to specify target value of carbon intensity which are in line with the development plan of the country which determine to become the low-carbon society.

CO₂ Emission from Hot-Rolled Coils Pickled and Oiled (PO Coils)

Ton CO₂/Ton PO Coil



Air Quality Control

SSI Bangsaphan Steelworks was designed for efficient consumption of fuel with the computer-run combustion system controlling the sulphur level in the fuel to not exceeding 2%. All these factors made level of air emission outside the plant better than standard levels and requirements specified in the plant's environmental impact assessment report.

With regards to the Hot-Rolled Coils Pickled and Oiled production line, acid gas detection systems have been installed both in the production line and the acid treatment plant for recycling purpose. As a result, level of air emission outside the plant is also better than standard levels and requirements specified in the plant's environmental impact assessment report.

Air quality in the atmosphere around the plant is monitored in various parameters throughout the year. In 2019, 5 stations, namely, Ban Tha Kham, Ban Tha Manoa, Ban Klang Aow, Ban Tubmon and Ban Bor Thonglang were monitored. The air qualities by parameters measured are as follows:

1. Hourly average level of density of sulfur dioxide in the atmosphere
2. Hourly average level of density of nitrogen dioxide in the atmosphere
3. Hourly average level of total suspended particulate (TSP) in the atmosphere
4. Hourly average level of density of hydrogen chloride in the atmosphere
5. Hourly average level of particulate matter less than 10 microns (PM10)

Inspection results of air quality assessments pursuant to the above parameters of all stations were much better than the set standard. In addition results from the previous inspections of all stations and all parameters measured show similar outcome.

Ambient Air Quality Measured from 5 Stations around the Plant

Index	Average of minimal-maximal quantity of air found		Standard
	13 - 20 Feb 2019	12 - 19 Sept 2019	
Total suspended particulate (mg/m ³)	0.037 - 0.119	0.035 - 0.073	No more than 0.330 ^{1/}
Sulfur dioxide (mg/m ³)	0.0099 - 0.0118	0.0099 - 0.0123	No more than 0.300 ^{1/}
Nitrogen dioxide (mg/m ³)	0.0301 - 0.0433	0.0286 - 0.0369	No more than 0.320 ^{2/}
Particulate matter less than 10 microns (mg/m ³)	0.015 - 0.056	0.017 - 0.037	No more than 0.120 ^{1/}
Particulate matter less than 2.5 microns (mg/m ³)	0.012 - 0.027	0.009 - 0.016	No more than 0.05 ^{3/}
Hydrogen chloride (mg/m ³)	< 0.001	< 0.001	-

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

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

Standard^{3/} : Particulate Matter less than 2.5 Microns Standards, Notification of the National Environment Board, No.36, B.E. 2553

Remark : < 0.001 is the Detection Limit of HCl
HCl does not have specific standard

Measured/analysed/controlled by

S.P.S. Consulting Service Co., Ltd.

Recorded by

Mr. Rutthanakorn Yochruengsak

Examined/controlled by

Ms. Atchara Chaiyao (๓-011-๓-7116)

Analysed by

Ms. Wasinee Singpisut (๓-011-๓-6222)

Telephone No.

0-2939-4370-2

Air Emission from the Furnace I and II

Index	Result				Standard
	14 Feb 2019	18 May 2019	17 Sep 2019	17 Dec 2019	
Particulate matter (mg/m ³)	188	171	132	236	No more than 240 ^{1/}
Sulfur dioxide (SO ₂) (ppm)	273	356	247	336	No more than 800 ^{1/}
Oxide of nitrogen (NO _x) (ppm)	104	113	73	110	No more than 200 ^{1/}
Carbon monoxide (CO) (ppm)	5.4	17	4.7	28	No more than 690 ^{2/}

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

Standard^{2/} : Standard of contaminants in air released by the factory, Notification of the Ministry of Industry B.E. 2549

(For production process with fuel combustion)

Industrial emission standard, Notification of the Ministry of Natural Resources and Environment B.E. 2549

Measured/analysed/controlled by	S.P.S. Consulting Service Co., Ltd.
Recorded by	Mr. Pipat Sukhathungka
Examined/controlled by	Ms. Atchara Chaiyao (๓-011-๓-7116)
Analysed by	Ms. Wasinee Singpisut (๓-011-๓-6222)
Telephone No.	0-2939-4370-2

Air Emission from the Scrubber PPPL (from the pickling and oiling process)

Index	Result		Standard
	20 Feb 2019	13 Sep 2019	
Hydrogen chloride (mg/m ³)	0.46	0.23	No more than 200 ^{1/}

Standard^{1/} : Standard of contaminants in air released by the factory, Notification of the Ministry of Industry B.E. 2549

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

Industrial emission standard, Notification of the Ministry of Natural Resources and Environment B.E. 2549

Measured/analysed/controlled by	S.P.S. Consulting Service Co., Ltd.
Recorded by	Mr. Pipat Sukhathungka
Examined/controlled by	Ms. Atchara Chaiyao (๓-011-๓-7116)
Analysed by	Ms. Wasinee Singpisut (๓-011-๓-6222)
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Air Emission Quality from Boiler

Index	Result		Standard
	20 Feb 2019	13 Sep 2019	
Particulate matter (mg/m ³)	11	4.4	No more than 120 ^{1/}
Sulfur dioxide (SO ₂) (ppm)	2	0.3	No more than 800 ^{1/}
Oxide of nitrogen (NO _x) (ppm)	39	34	No more than 180 ^{1/}
Carbon monoxide (CO) (ppm)	1.4	1.8	No more than 690 ^{2/}

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

Standard^{2/} : Standard of contaminants in air released by the factory, Notification of the Ministry of Industry B.E. 2549 (For production process with fuel combustion)
Industrial emission standard, Notification of the Ministry of Natural Resources and Environment B.E. 2549

Remark : < 0.1 is Detention Limit of SO₂

Measured/analysed/controlled by : S.P.S. Consulting Service Co., Ltd.
Recorded by : Mr. Pipat Sukhathungka
Examined/controlled by : Ms. Atchara Chaiyao (๓-011-๓-7116)
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Telephone No. : 0-2939-4370-2

Air Emission Quality from Dust Collector

Index	Result		Standard
	20 Feb 2019	7 Sep 2019	
Particulate matter (mg/m ³)	4.5	3.3	No more than 120 ^{1/} , 300 ^{2/}

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

Standard^{2/} : Standard of contaminants in air released by the factory, Notification of the Ministry of Industry B.E. 2549 (For production process without fuel combustion, calculated at actual oxygen concentration in emission when measured)
Industrial emission standard, Notification of the Ministry of Natural Resources and Environment B.E. 2549

Measured/analysed/controlled by : S.P.S. Consulting Service Co., Ltd.
Recorded by : Mr. Pipat Sukhathungka
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Waste Management

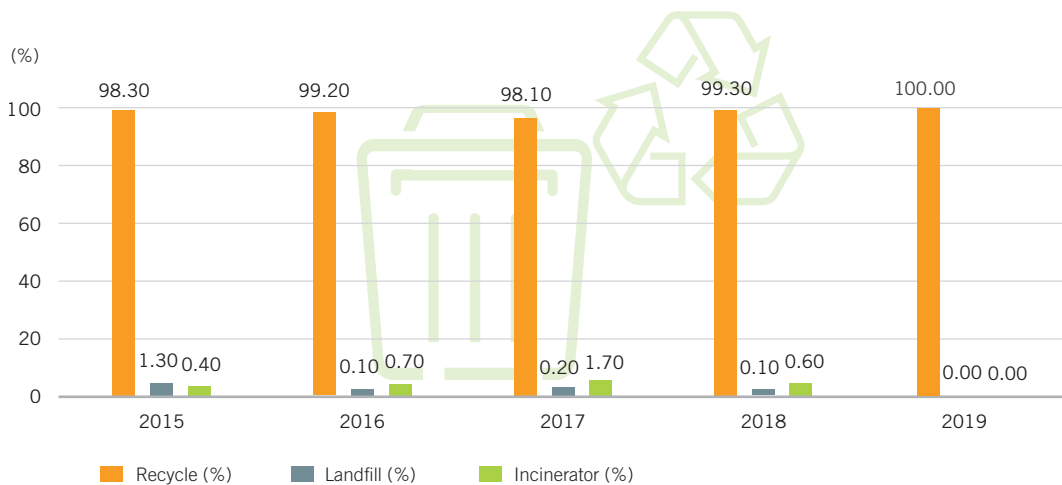
The Company is committed to reduce quantity of waste at source by applying the 3R's – Reduce, Reuse and Recycle.

- **Reduce:** Reducing waste at source and encourage efficient use of resources such as general waste, waste grease and waste oil etc.
- **Reuse/Recycle:** Reusing the waste or re-processing through recycling to minimise waste or maximise its usage, such as reducing contamination of existing oil and recycling waste, change waste disposal method from landfill to recycling for maximum usage and wasted food was used to make fermented bio-extract then distributed to staff.

Moreover, apart from applying 3R's to reduce waste at the original source, SSI also disposes of waste with minimal environmental impact as follows:

- **Disposal:** Disposal or pretreatment of waste. SSI uses services of well-known waste processor with expertise and certification by the authorised government agency.
- **Industrial waste management:** SSI employs industrial waste pollution controller, to ensure that the operation has been performed correctly and in compliance with the laws.

SSI's Disposal of Waste in 2015 - 2019



In 2019, the total waste amounted to 40,804.14 tons, waste management cost was Baht 6.06 million and sale of 37,299.97 tons of waste amounted to Baht 187.72 million. All of waste had been disposed by means of recycle (100.00%) and none of them has been disposed by incinerator or by landfill.

Cooperation with External Organisations

The Company intends and voluntarily participates in climate change mitigation projects and activities with government agencies and external organisations. Key projects and activities participated in 2019 are as follows:

1. Collaboration and development project with South East Asia Iron and Steel Institute (SEAISI) through Environment & Safety Committee (ESCO) Working Group. Representative from SSI was continuously nominated as ESCO's chairman. The role of ESCO is to exchange information on technologies in aspect of environment, energy and safety among member countries and to drive for joint study projects. Report has been proposed during the 33rd ESCO Meeting in Indonesia with details as follows:

- Thailand Country Report 2019
- special Fund Activity (SFA) Project. SSI has collaborated

with Iron and Steel Institute of Thailand (ISIT) to request funding from SEAISI. The purpose is to organise seminar in the topic of "Circular Economy of Thailand Steel Industries" on 28 October 2019 at Prakaipetch Room, Asia Hotel, Bangkok.

2. Life cycle assessment and environmental label for implementation of online library on environmental construction material for green office, jointly with Kasetsart University under the support of the National Science and Technology Development Agency (NSTDA). SSI has been selected to join this project as a representative of steel group in 2019. This project is now under operation and upon the project is finished, carbon footprint label will be received and life cycle assessment (LCA) result will be known.

3. Life Cycle Assessment (LCA) Project of Steel Industries jointly with the World Steel Association (Worldsteel). SSI has collected Life Cycle Inventory (LCI) data, which is based on the scope of Gate-to-Gate calculation by taking into consideration the production process. Worldsteel has assessed LCA and also further applied model for upstream assessment for SSI and results from LCA assessment made SSI acknowledge significant impacts on environment and comparison with average data at global and regionally levels. This project has been performed continually for the 4th years since 2016 to date.

Green Industry

SSI signed the memorandum of co-operation to develop a Green Industry with the Ministry of Industry as it recognises the importance of co-existence between the industrial community and the social and environmental factors. Under this umbrella, SSI has been certified in the Third Level Green Industry (Green System), due to our systematic environmental management and monitoring for continuous development, since 2011 to 2019. SSI expects that the year 2020 will be certified the Fourth Level Green Industry (Green Culture).



Surveying Local Attitudes and Local Participation on Environment

A survey on attitudes of the community is conducted annually among the communities around the plant. The communities are important stakeholders for SSI because the operation of the plant affects them economically, socially and environmentally in both positive and negative ways. Thus, an attitude survey enabled the Company to understand their perception through community leaders and household leaders on various effects from the operation of the plant throughout the year. It also paves the way to joint decisions through participatory meetings, for example, community leader council meetings and village meeting. SSI has used suggestions from these meetings as a basis to arrange programs that directly respond to the need of the community and lead to sustainable local satisfaction.

Surveys made in 2019 show that most locals accepted and appreciated that the Company has played a part in improving income generation, better commerce and infrastructure. Such activities included donations for educational purposes, aquatic animal conservation, career development, community-banking and mangrove forest conservation. The top priority was tree-planting, followed by beach clean-up & garbage collection, Mae Ramphueng mangrove conservation, aquatic animal conservation, local environment safeguarding, provision of scholarship, monetary/ educational equipment donations for community education, youth camp and other activities.

There are top 3 concerns, resulting from the survey in 2019, including traffic congestion (9.6%), noises from steel transportation trucks (6.7%) and particulate matter from traffic (2.1%). While top 3 concerns from 2018 survey were traffic congestion (8.5%), accidents from traffic (7.7%) and defective transportation routes (1.6%). Therefore, it could be seen that their major concern was still traffic problem. To alleviate community concerns about traffic issues, the company has partnered with transportation companies by specifying additional measures to monitor and supervise more effectively as follows:

1. Cooperation with the Transportation Bureau, Bangsaphan Industrial and Community Education College and other government agencies involved in order to educate the drivers in maintaining their vehicles, safely driving and 100% compliance with traffic rules.
2. Program to support and train the community people to become professional drivers. At the end of the course, they will be offered the opportunity to become employees of the transportation company, which can encourage the local people to have a job and help regulate traffic safety.
3. Provide a rest area for the driver to take a break and be checked for readiness on their health.
4. Increase the capability of the Operation Control Center to inspect the traffic and speed in Bangsaphan area via GPS system 24 hours a day.
5. Support and provide traffic safety equipment to Village security guard/group in Bangsaphan District to help oversee the traffic of general cars and cargo trucks of the Sahaviriya Group.
6. Training the village security guard/group on rescue and assistance skills in case of emergency on traffic or basic fire.
7. Increase traffic monitoring point on compliance with traffic rules of bus transportation by installing 4 additional CCTV cameras along the route in Bangsaphan.
8. Increase the number of drivers so they can drive alternately to get more leisure time under the "TAG TEAM".

These measures are supplemental parts from the routine works, such as time management to release freight car, avoid heavy traffic durations, control not to overload exceed than specified by the law, installation of CCTV, car patrol arrangement, establishment of the Sahaviriya Transportation Truck Fund and Seminar for transport operators.

Social Performance



SSI recognises the importance of customer satisfaction and its effect on successful business, therefore specific focus is placed on ensuring best practice is achieved to effectively and efficiently respond to customer's needs.

Creating Customer Value and Fair Operating Practices

SSI recognises the importance of customer satisfaction and its effect on successful business, therefore specific focus is placed on ensuring best practice is achieved to effectively and efficiently respond to customer's needs. Furthermore, fair operating practices with business partners are always carried out in order to create appropriate benefits for both parties. The Company ensures that correct reports and facts are provided to customers and performs in line with contracts and the Company is committed to negotiating appropriate solutions based on business relationships, avoids business conflict situations and adheres to fair treatment.

Innovated Value Products

In 2019, the Company has set up activities to strengthen relationships with customers, particularly in relation to resolving problems, handling customer complaints, and receiving feedback and suggestions. The data from the activities is used to develop product services and quality to meet the needs of the customers. Activities undertaken included customer visits, meetings with key customers on a monthly basis, annual customer satisfaction surveys, training and providing further knowledge of the company's products. SSI also provided advice and assistance to clients to support them in resolving any problems associated with the Company's products.

Our Innovated Value Products Working Team has carried out these activities to analyse customer needs, by working with the Production Team to drive the development of products and services quality. Improvements made include, controlling product dimensions to reduce customers' loss, specially designing product properties according to customers' requirements and enhancing transportation efficiency to achieve on-time delivery for urgent orders. These will support customers to broaden their performance and expand marketing opportunity. Further important developments are as follows:

1. Developing High Strength Steel TS more than 590 MPa
2. Developing ASTM A455 for Gas cylinder application
3. Completed prototype solution SSI AirPurlin product development for construction customers
4. Developing IVP: To reduce width margin from 10 mm to 8 mm for thin gauge (W+8 t1.70 - 1.99 mm) and control narrow width tolerance (SW6), creating value added to customers for special use customers.

In 2019, SSI had delivered 785,362 tons of Premium Value Products (PVP) which represent 59% of the total sales.

Create Shared Value with Business Partner

The company procures materials and services from the community in Bangsaphan District. For use in the production of the company also supports the income-raising occupation of the community product manufacturers in Bangsaphan District as well.

In 2019, the Company purchased products from general vendors at approximately Baht 3,340 million which can be classified as follows: Baht 846 million for energy product group, Baht 476 million for spare parts, Baht 985 million for factory supplies, Baht 167 million for consumable parts, Baht 258 million for Tangible Fixed Asset and Capital Expenditure, Baht 589 million for services, Baht 19 million for others, and Baht 290 million for local purchases in the Bangsaphan community. For 2020, it is expected that procurement costs will be raised up to Baht 3,600 million from general vendors and Baht 300 million from the local community.

Fair Trade Practices

The Company realised about fair treatment with trade competitors by complying with the rules and laws of the government sectors, such as Trade Competition Act B.E. 2560 and the Company would not seek for trade secret information of any trade competitors by using dishonest or unappropriated means and would not destroy reputation of any trade competitors by means of slander. In addition, the Company is the backbone on establishment of The Association of Thai Hot-Rolled Flat Steel where the management of the Company, the management of the trade competitors and trade partners are the committees. All parties held joint meetings and activities regularly and the Company also met with the management of the trade competitors to strengthen good relationship as well as exchange experiences, support as well as drive for fair trade policy and competition through government agencies or other relevant agencies.

Moreover, the Company also played a leading role in promoting cooperation of 7 national steel manufacturing associations, which have totaling 472 companies as members to strengthen steel manufacturers of Thailand by jointly pushing for public sectors' policies in order to drive the national steel industries to 4.0 steel industries.

Innovation Research and Development

Sahaviriya Steel Industries Public Company Limited, in 2019, has a strong intention to develop the potential of steel industry by strengthening people in the organisation first. SSI has continuously educated our employee in the project “School of Engineering (SoE) - Intermediate Cause” to provide sophisticated engineering knowledge and technology information for employees, which will be beneficial for their work and enhances the business competencies. The contents provided in the project include; (1) Material Engineering (2) Process and Production Application Engineering, (3) Mechanical and Electrical Engineering (4) Industrial Engineering (5) Automation Engineering (6) Energy Engineering (7) Environmental Technology Engineering (8) Project Management Engineering. To ensure that the knowledge and experience sharing are from reliable sources, the Company invited experts to share the knowledge to SSI’s Employees.

In addition, SSI has conducted Steel Construction Forum Seminar to propagate knowledge and innovation in steel construction product and also give networking within contractor, engineer and academic.

With regard to research and development, the company has also coordinated with the academics, institutes, and universities (i.e. National Metal and Materials Technology Center, Synchrotron Light Research Institute (Public Organizations), Metallurgy and Materials Science Research Institute (Chulalongkorn University), and King Mongkut’s University of Technology North Bangkok) to conduct the researches in order to continuously develop products and innovations that serve and support steel industries. With regard to research and development, the company has also coordinated with the academics, institutes, and universities (i.e. National Metal and Materials Technology Center, Synchrotron Light Research Institute (Public Organizations), Metallurgy and Materials Science Research Institute (Chulalongkorn University), and King Mongkut’s University of Technology North Bangkok) to conduct the researches in order to continuously develop products and innovations that serve and support steel industries such as study on adhesion characteristic of oxide scale on hot rolled coil for improvement of surface quality and development of SSI purlin.

Anti-Corruption

The Board of Director constantly places a strong emphasis on conducting business under the principles of good corporate governance and social responsibility which is intended for sustainable development. The Company deems that corruption is harmful and causes great damage to organisations and the nation. The Company therefore fully supports the implementation of the anti-corruption policy. On 22 January 2016, the Company was first certified by Thailand’s Private Sector Collective Action Coalition Against Corruption Project (CAC) and became a member of CAC. Recently, on 21 May 2019, the Company passed recertification process and the certificate had been valid for 3 years. In 2019, the Company carried out the following activities:

The Company established supervision and control practices to prevent and monitor fraud and corruption risks, which were summarised as follows:

1. Policies and Guidelines on Anti-corruption

The Company promulgated the policy and guidelines regarding anti-corruption in 2014 and continuously abided by them to confirm its intent and expectations to fight against corruption.

The anti-corruption policy states that Directors, Executives, and all employees are prohibited from accepting or being involved in any type of corruption either directly or indirectly. The Company shall act strictly in enforcing compliance with Thai anti-corruption laws and regulations, and those of each country in which the company conducts its business. The Board also determined that the Company’s subsidiaries and its jointly controlled companies shall adopt this anti-corruption policy including any guidelines issued by virtue of such a policy.

In 2019, the Company's Guidelines on Anti-corruption has been revised to align with the notification of the National Anti-Corruption Commission (NACC) Re: Guidelines on Appropriate Internal Control Measures for Juristic Persons to Prevent Bribery of State Officials, Foreign Public Officials and Agents of Public International Organizations" under section 123/5 of the Organic Act on Counter Corruption B.E. 2542. The anti-corruption guidelines provide guidance on offering or receiving gifts or entertainment or hospitality activities, granting contributions or donations to charities or commonwealth, and political contributions, reporting of suspected fraud or corruption. This policy and guidelines were developed in addition to "SSI WAY" including the Company's commitment to ethics which is mentioned in business philosophy, integrity which is mentioned in business ethics, employee ethics and values, as well as the ethical conduct for employees on conflicts of interest which is mentioned in the Company's guidelines regarding conflicts of interest.

2. Communication of Policies and Guidelines on Anti-corruption

The Company recognised the importance of communicating policy and guidelines on anti-corruption. They were communicated by an e-mail and internal newspaper. All employees were able to access to this policy and guidelines which were posted on the company Intranet and also available on the Company's website: www.ssi-steel.com. Moreover, at the annual supplier seminar which is held once a year, the Company's Anti-corruption policy will be communicated to all suppliers who attended the seminar and acknowledgement to comply with this policy. In 2019, the annual supplier seminar was held in March.

3. Training

The Company has continually provided training to encourage executives and employees to be aware of anti-corruption and to ensure that employees truly understand and can comply with the anti-corruption policy and guidelines. In 2019, Training employees on compliance with the Anti-corruption Policy through the mandatory orientation program for new starter were held quarterly in addition to the refreshing training program to reaffirm understanding of employees at both Bangkok office and Bangsaphan office.

4. Putting Policies into Practice

The Anti-corruption working committee has been appointed since 20 July 2015, to put the anti-corruption policy into practice and to enable the Company to maintain what it has been doing as a certified company of Thailand's Private Sector Collective Action Coalition Against Corruption. This is to express the Board's commitment and intent on Anti-corruption and to ensure that the Company has an anti-corruption measures monitoring, a delegation of power and a clear responsibility to implement the anti-corruption policy. In 2019, the Anti-corruption working committee prepared and submitted the documents to renew certification to be a member of Private Sector Collective Action Coalition Against Corruption Committee (CAC). In September 2019, the Company joined the National Anti-Corruption Day 2019" which was organised by the Anti-Corruption Organization of Thailand (ACT). Moreover, the Company organised activities that raised awareness among its employees such as anti-corruption logo design and slogan competition. The best design and the best slogan will be used as the driving messages in the Company's anti-corruption activities. There were total of 62 slogans and 15 logos submitted to the competition.

5. Fraud and Corruption Risk Assessment

The Company assessed risk of fraud and corruption by the risk owner of each division who identified events where fraud and corruption risk might occur in his/her area, assessed the likelihood and impact, reviewed and designed appropriate measures to combat fraud and corruption. The Group Risk Management Office then collected their results and proposed them to the Risk Management Working Committee for consideration before submission to the Risk Management Committee and the Audit Committee for acknowledgement. This is done annually.

The Company determined guidelines on monitoring and evaluating compliance with the anti-corruption policy as follows:

1. Whistle-Blowing System

The Company provided Whistle-Blowing channels for stakeholders to raise concerns about offenses against the law, unethical practices, poor or unacceptable practices, abuse of authority, irregularities, corruption, fraud or misconduct, violations of the company's conflict of interest policy, abuse and disregard of company policy, guidelines, instructions or procedures, fraudulent financial reporting, deficiencies in internal control systems or any action that may cause damage to the informants or the company, without fear of retribution by having measures to protect the informants or whistleblowers. The Company also provided measures to review or investigate the whistleblower's concerns and the imposition of punishment of offenders. All the whistleblower's concerns that were raised with the Good Corporate Governance Committee were to be tracked and examined, resolved and responded to informers as soon as possible. These were also reported to the Audit Committee for acknowledgement. Moreover, a summary of the Good Corporate Governance Committee's activities were also reported to the Board of Directors twice a year. In 2019, the Company received 1 case through whistle-blowing system, verified the validity, and conducted a preliminary investigation with meticulousness to reach a conclusion and then reported to Good Corporate Governance Committee.

2. Internal Audit

The Group Internal Audit Office participated in an assessment to assure and advise on good corporate governance, risk management and internal control. The Company's internal control was assessed by the Group Internal Audit Office together with the management every six months especially the assessment of risk factors relating to misstatements arising from fraudulent financial reporting or misappropriation of assets. The Group Internal Audit Office also developed an audit coverage plan and an annual audit plan using a risk based approach including fraud and corruption risk. The audit engagements were conducted following the annual audit plan that has been approved by the Audit Committee and the audit results were reported to the Audit Committee. In 2019, the Group Internal Audit Office reviewed the corruption prevention controls in order to ensure compliance with the relevant applicable laws and standards such as the Organic Act on Counter Corruption B.E. 2542 (1999).

3. The self-assessment and monitoring for compliance with Business ethics and Employee ethics

The Company continually surveyed its employees about their perceptions and compliance with the Company's Code of Conducts including Business ethics and Employee ethics by using the self-assessment questionnaire as a tool. Not only the perceptions and compliance with the Company's code of conducts but also the anti-corruption policy was also surveyed. The objectives of the survey are to improve the effectiveness of internal communications to ensure employees understand the Company's Code of Conduct and anti-corruption policy and to monitor and assess employees' compliance with them.

Human Resources and Right

The Company recognises the importance of human resources that they are essential to the organisation's business success. We have determined the appropriate structure of employment, compensation and benefits, personnel development and the Company has continued the Care Organization Project to promote activities related to employees and their families, creating efficient collaboration and working relationships between employers and employees. The project supports employees to achieve an appropriate work life balance by considering their personal life and family. In addition it encourages employees to demonstrate good values and act as role models.

Employee Structures

In 2019, SSI employed 1,177 people; 187 at the Bangkok office and 990 at the Bangsaphan Steelworks. The employee structure recognises levels of employee as follows:



Executive
56 people



Managerial
202 people



Supervisory
473 people



Operational
446 people

SSI Group Employee

SSI Group Employee Level	SSI	TCRSS	WCE	PPC	Total
Executive level	56	8	5	1	70
Managerial level	202	76	39	4	321
Supervisory level	473	208	159	31	871
Operational level	446	572	477	57	1,522
Total	1,177	864	680	93	2,814
SSI Group employee level	156	140	163	0	459

(Number of Employees of SSI Group: as at 31 December 2019)

Employment

The Company has a policy to encourage employees to consider promotion and rotation of roles. The policy looks to appoint internal employees into roles who have the appropriate knowledge and qualifications. If there are no suitable current employees for a required role, the Company will recruit potential external candidates. Recruitment policies are open to all genders, races, religions, ages of 18 years and over, providing the person

is appropriately qualified and competent. The Company conducts interviews with fairness and effectiveness in recruitment and selection. In 2019, the Company had 206 job vacancies with 491 potential candidates and 182 people were successfully recruited into these roles; 121 newcomers and 59 transferring employees within organisation. As for the underprivileged, there are limited positions because of job characteristic. The Company also has contributed to the Empowerment of Person with Disabilities Fund through the improving quality of life of people with disabilities.



Employee Development

The Company has established guidelines to develop staff to be consistent with the vision, mission and strategic plan according to the competency based guidelines to recognise talented staff and support the development of staff, in accordance the SSI Way. In 2019 SSI has arranged training courses as follows:

Training and Development of SSI Staff in 2019

Guideline	Method	Outcome in 2019
On-the-Job Training (OJT)	Set standards of necessary knowledge and skills to different tasks and assigned supervisors to coach and train staff to enable them to perform in accordance with the knowledge and skill levels required. The supervisors will regularly monitor the outcomes and performance.	173 people
In-house Training	<ol style="list-style-type: none"> In-House Training inviting internal and external speakers with knowledge and expertise in various fields Organise Knowledge Sharing activities to share work experience The content about: Management Workplace Behavior Technical Competency Productivity Occupational Health and Safety etc.	129 courses (261 times) 1,177 participants Average training period 32.26 hours/ person/year
Staff Development - talented and good staff through the SSI Way	Staff development activities to recognise knowledge and awareness/ Core competency "iFacts"	11 activities 965 participants
Domestic and Overseas Training	Appoint staff to undertake training courses held by external organisations, both domestic or based overseas	196 courses 337 participants Average training period 4.35 hours/ person/year
Acknowledge the Annual Division Goal Program Presentation 2018	Managerial level executives and upwards were informed about policy and strategies through Goal Program Presentation, by each division.	213 participants (Managerial and above level)

Welfare and Benefits

SSI places a focus on the welfare and benefits of employees and complies with the relevant legislation on employment such as leave days and holiday leave. Moreover, the Company provides the following welfare and benefits appropriate to the relevant working conditions:

- Annually 2 uniforms
- 5-route transportations for staff in Bangsaphan to travel into the office
- Monetary support for staff who live outside of the Bangsaphan district area
- Free rice and inexpensive food for staff
- Upcountry allowance for staff who work at Bangsaphan Steelworks
- Travelling allowance support for employees who work in other locations and overseas
- Shift allowance for shift workers
- Provident fund for employees on retirement
- Internal Sport, Sport Day and Anti-Drugs Sports
- Organise a savings cooperative to provide employees with savings and provide assistance to employees who have suffered
- Health and life insurance and travel insurance for overseas business trip
- Health and life insurance for employees

Employee Relations

The Company recognises the importance of building relationships between employees and management to create an effective work environment and to provide employees with a balance between work life and family life (Work Life Balance). The Company has therefore maintained the “Care Organization” project which has included the following activities:

- Meet Management: The following activities have been put in place to establish a relationship between employees and management:
 - Annual policy statement: President informed managerial level staff about the strategic plan and company policies.
 - Goal Program Presentation: Managers and above reported their annual plans twice a year to support the company strategy and business plan. This allowed other managerial staff to share their plans and received comments and suggestions for improvement from the Management Committee.
 - Announce Division Annual Strategic Plan: Each management division presented to their staff the division strategy to create awareness and improve all employees understanding.
 - Executive meeting and participate in activities together: Management have visited the plants to participate in company activities such as sport, voluntary work, blood donations and merit in the New Year. These activities supported the Company's agenda to promote talented and good staff through the SSI Way and Promoting Corporate Value activities.
 - Increasing the well-being of employees and their families: Project activities have been set up such as Happy Family Project for 120 families, Family Day, Children's day and Volunteer Project for on fire and flood disaster.
 - HR Clinic: The Company arranged HR consulting staff to advise employees on any HR queries, for example company rules & regulations, salary, personal tax etc.

Creative Internal Communication

In order to build good relationships and encourage understanding between the organisation and all staff levels, SSI focuses on creative internal communication via many channels as follows:

Communication Channel	Objective	Outcome 2019
<ul style="list-style-type: none"> • Message from Group • CEO and President and Management (interviews with executives and publish on the intranet and internal TV) 	To inform and make all staff aware of policies, operation directions and major performances of the Company directly from Group CEO and President and the Management	3 times
Goal Program Presentation	To allow all staff of managerial level and upwards to acknowledge and share their opinions on the direction and business operation. This is performed for the Company in overview and for different departments to allow clear communication between teams.	2 times
Voice on the Line	To provide information to staff directly from the management team to help them understand the business vision or related operation.	5 days/week
Morning Talk (monthly/weekly)	To allow managers and staff to have a two way communication system to update on news related to the company and to solve any work issues.	1 day/week
Face to Face Workforce Visit	To visit staff at their operational locations to provide information and news about activities being held in the Company as well as asking them for their opinions and suggestions.	4 times
Employee Relations staff visit shift staff at their workplace	To visit night shift workers at their workplace and gain their opinion and provide them suggestion.	12 times
Welfare Committee	To communicate employees' requirements to the management team and strengthen the relationship between executives and staff.	4 times
Electronic Newsletters	To publicise updated information and activities of the Company. The newsletter includes completed and future projects to provide useful information related to daily life and health.	450 times
SSI Way Understanding Activities	To help employees learn and understand the "SSI Way" which are the values that the Company encourages staff to demonstrate - "good person", "talented person" and "qualified person" who will help develop both the organisation and the society.	10 activities
Internal TV	To distribute major information to all staff quickly	280 times
Communication via Social Media (Facebook, Page-SSI Employee Relations and Welfare)	Social media is used as a two way communication tool to inform staff about updated information regarding the organisation. The communication can be made via both the internet and smart phone.	540 messages

Social Capital and Community Development

SSI has continuously focused on social and community development on sustainable basis in order to strengthen its stakeholders by adhering to three fundamentals: creativity, stakeholder engagement and operation efficiency. In 2019, the Company operated 41 social and community development projects (inclusive of 22 SSI Arsa projects), which benefited 16,102 stakeholders. These projects are divided into two parts: 1) Social capital development to strengthen the underprivileged and 2) Community development which emphasized on 4 aspects: education, environment, occupation and income, good quality of life as well as religion and local cultural support.

Social Capital Development

Kon Lhek Mini Marathon 2019

The Company, and its steel industry partners, namely, Thai Cold Rolled Steel Sheet Public Company Limited (TCRSS), NS-Siam United Steel Co., Ltd. (NS-SUS), NS Blue Scope (Thailand) Limited (NS Blue Scope) and JFE Steel Galvanizing (Thailand) Co., Ltd. (JSGT) jointly arranged “Kon Lhek Mini Marathon 2019” on Sunday 27 October 2019 at Stadium One. This year event has been supported by 149 organizations who are customers, business partners and organization as well as 1,659 employees and general people which could raise fund (without deducting expenses) of 2.3 million to support 20 foundations for the underprivileged. This event which arranged for 12 consecutive years could raise fund more than Baht 29 million in total.





Community Development

In 2019, SSI has carried out 40 community development projects which reflected our commitment to be the good citizenship and to earn trust from Bangsaphan locals and stakeholders with ultimate objectives to build up strength and well-being of the community and the society. These community development activities of SSI focused on engagement from everyone, including SSI staff, locals and related organizations in the following aspects: education development, environment preservation, occupation and income enhancement, healthcare promotion, religion and cultural support and “SSI Arsa,” volunteer spirit project development among SSI staff.

Jointly Developing Quality of the Community Education

Sahaviriya Funds for Bangsaphan Educational Development

Sahaviriya Funds for Bangsaphan Educational Development Project emphasised on development of quality of education in Bangsaphan District in 3 dimensions (school, teacher and student) with co-operation from the Office of the Basic Education Commission (OBEC) and from the Office of Prachuap Khiri Khan

Primary Educational Service Area Zone 1. This project invited the qualified schools in Bangsaphan District to submit the 3-year education quality development plan to compete for the development fund. The winning's school will receive total fund of Baht 1.2 million during 3 years to develop the school as per the proposed plan. This project commenced since 2011 and the present one is the 8th batch. In 2019, there were 10 schools from 3 batches under project operations, for example, the 6th batch which commenced in 2017 comprising Bangsaphan Kindergarten, Kumnerd Noppakhun Sub-district and Ban Wang Num Khiew School, Ronthong Sub-district; the 7th batch which commenced in 2018 comprising Women Secretary Association School 1, Chaikasem Sub-district, Ban Khaoman School, Chaikasem Sub-district, Ban Klongloy School, Ronthong Sub-district, and Ban Suanluang School, Phong Prasat Sub-district; and the 8th batch which commenced on 2019 comprising Bangsaphan School, Mae Ramphueng Sub-district, Ban Don Sa-nga School, Kumnerd Noppakhun District, Ban Huaykaew School, Pongprasart Sub-district and Ban Wangyao School, Thong Monkol Sub-district.

All participating schools have passed the strict supervision, monitoring and evaluation pursuant to the criteria specified in the plan, as per decided by the central academic experts. Sahaviriya Funds have been periodically granted pursuant to the conditions of the project.



Technician Potential Development for Steel Industries

The Company has collaborated with the Office of the Vocational Education Commission (VEC) and Bangsaphan Industrial and Community Education College under the “Technician Development for Steel Industries Project” for joint development and improvement of curricular at vocational certificate and high vocational certificate as well as development of potential of technical students to be in line with requirements of steel industrial groups and continual industrial groups. This project has been undertaken for 12 years and has about 669 technician graduates in 4 fields, i.e. industrial technical, industrial mechanical technical, electrical technical and warehouse management. Out of this number, 185 graduates are now working with Sahaviriya Group. In addition, this project becomes a model on formulation of dual vocational training (DVT) between the vocational education college which is a government sector and Sahaviriya Group, a private sector.

SSI Group Annual Scholarships

In 2019, the Company and SSI Group provided 340 SVG Annual Scholarships, worth Baht 735,000 to local youth in 22 schools in Bangsaphan District who have determination to study but have economic difficulty, with details as follows:

- 249 general scholarships for primary school – high school students, worth Baht 275,000,
- 10 continuous scholarships for bachelor’s degree students, worth Baht 350,000,
- 4 “SSI Arsa” scholarships from SSI Arsa Working Group, worth Baht 8,000.

Moreover, SSI staff also provided 77 additional scholarships, “Tun Nee Phue Nong”, worth Baht 102,000.

Term Khwarm Fun Pun Khwarm Roo (SSI Fulfill dream and share knowledge) Project

SSI and SSI Group together with Bangsaphan Wittaya School arranged academic activities to enhance knowledge in five subjects (Science-Mathematics-English-Thai-Social Science) to prepare readiness of the students for General Attitude Test (GAT) and Professional and Academic Aptitude Test (PAT) before entering into the university. There were 625 students in Mattayom Suksa 6 from educational institutes in Bangsaphan District and nearby areas, such as Bangsaphan Wittaya School, Government Saving Bank School, Chai Kasem Wittaya School, Bangsaphan Noi Wittayakom School and Thong Chai Wittaya School participated in these activities.





Local Curriculum Development Project

SSI has joined with the local schools and local people in setting up the Local Curriculum Development Committee to apply learning process which are in line with social context in the locality for sustainable development of quality of life and environment as well as to create actual participation through study courses taught by 16 SSI volunteer teachers who have keen expertise in this field. The topics, which were taught to 732 students in Prathom 4 to 6, totally 38 hours in a year, were about “Steel in Daily Life” and “Steel Industry and Community Development”.

Furthermore, in 2019, this project has expanded to include one more school, namely, Bangsaphan Kindergarten, and teaching activities have been organised continuously in the participating schools, such as Bangsaphan School, Ban Ao Yang School, Wat Ban Na Phak Khung School, Ban Chamuang School, Ban Don Sumran School and Ban Tha Kharm School. Currently there are 7 schools participating in this project which has been operated since 2012.

Sufficiency Economy School for Sustainability Project

SSI recognised the importance of idea of Sufficiency Economy of His Majesty King Bhumibol Adulyadej The Great (King Rama IX) and supported the social activities which emphasised on sustainable self-sufficiency, consequently, Sufficiency Economy School for Sustainability Project has been initiated since 1012. To date, the participating schools still continue these activities.

In 2019, the project has expanded to include Ban Nailock, Moo. 8, Tong Monkon Sub-district, Bangsaphan District, Prachuap Khiri Khan Province. There were various operations for sustainability, such as study visit at the model schools; joint meetings with executives, educational personnel, school committees and village meetings to create understanding and involvement in the project, resulting in shared value between the Company, the schools and the communities through the schools’ activities of sufficiency economy. Such activities included planting home-grown vegetables and dragon fruit; making soap for usage in school and for sale, as well as managing waste in school via waste bank. This activity has extended the results on environmental management to the communities to push for circular economy system. About 440 students benefited from this project.

Village Youth Council Project

This Village Youth Council Project, which has been firstly initiated in 2012 at Ban Don Sa-nga with aims to encourage the youth to develop their own communities, cultivate public awareness and conservation of their own communities, promote alternative career and saving managed by the Youth Council’s management.

In 2019, the Company has strengthened the Children and Youth Council of Kumnerd Noppakhun Sub-district with support from the cooperation network members from the government organisations, such as Prachuap Khiri Khan Shelter for Children and Families, Department of Children and Youth and Kumnerd Noppakhun Sub-district Administration Organization. The support fund of Baht 50,000 has been provided to Kumnerd Noppakhun Children and Youth Council to perform activities as per its objectives, such as arrangement of 2 anti-drug sport activities for the youth of Ban Na Phak Khung Village and 3 lawn mowing activities around the roads in and around the village jointly with the youth’s parent throughout the year in order to cultivate public mind to the youth and villagers in Ban Na Phak Khung Village, Kumnerd Noppakhun Sub-district. There were more than 80 people participating in each activity.

Career Development to Strengthen Household Economy

Occupation and Income Enhancement

The Company has arranged the agricultural development and promotion projects to increase income of the local agricultural groups and housewives groups as follows:

Community Bank Project

The Company and SSI Group have arranged the participatory development of quality of life on sustainable basis by jointly conducted with 18 villages in 4 sub-districts located surrounding the plant, by supporting and enhancing the communities to establish 18 community banks. As at 31 December 2019, total funds amounting to Baht 38,609,970, an increase by Baht 2,426,594 million from the amount of Baht 36,183,376 in 2018 and 3,487 project members could enjoy benefits, an increase by 125 people from 3,362 members in 2018. In addition, 9 community leader councils have been established to manage their own communities on participatory basis.

In order to make such project sustainable and on continual basis, in 2019, the Company has operated the works by focusing on increasing level and development of potentials by providing the following activities:

1. Arrangement of workshop on “Accounting for Dividend”;
2. Community Bank Audit.
3. Annual performance evaluation forum of 18 community banks.

Community Leader Council Project

The Company encouraged the community people to establish the community leader council to manage their own communities jointly with other associates networks, agencies of public sector, including Sahaviriya Group. In 2019, the activities arranged under this project were as follows:

1. “Information Presentation Speaking” workshop to develop speaking skills of the learning base lecturers of 4 model community leaders;
2. “Basic Speaking” workshop to develop speaking skill of the village health volunteers of 16 Tambon Health Promoting Hospitals;

3. Thongchai Elderly School in Thongchai Sub-district by jointly arrangement with Ban Thangsai Community Leader Council, Moo. 9, Thongchai Sub-district and Tambon Tham Kiriwong Health Promoting Hospital;

4. Participation with external network organizations, such as the 4th happy community market fair in Suphan Buri Province, the 10th National Moral Assemble at Thailand Cultural Center, and etc.

Sahaviriya Ruam Pattana Project and Participation on Associate Network Activities

The objectives of this project are to open opportunities to the agencies or the communities which participated in development activities with SSI Group to arrange exhibitions or display their works to disseminate to other participating agencies or communities including the third party to acknowledge their performance as well as to arrange the forum to exchange knowledge with each other. There were 16 exhibition booths with 419 people participated in this project.

Bangsaphan Community Enterprise Development Project

SSI is still the trade partners with 2 community enterprise groups, i.e. Ban Don Sa-nga Marketing Demonstration Center Community Enterprise to sell rice for the employees’ welfares and Ban Po Dang Community Enterprise to sell brooms made from coconut leaf stalk to be used at the plant, with values worth more than Baht 1,500,000. SSI also invited 5 potential community enterprise groups which have 30 members to participate in “2019 Sahaviriya Ruam Pattana Project” to acknowledge policy and guideline on development and promotion of the community enterprise in the areas and promote marketing and business skills by arranging exhibition booths and selling products and goods of the community enterprise groups.

Increase Locals Hiring from the Community

In order to comply with the policy on promoting local workforce employment, so that the local people from Bangsaphan District and surrounding areas do not have to migrate to other provinces to work and search for income, as of 31 December 2019, SSI Bangsaphan Plant employed 2,134 employees of which 1,613 of them or 75% have domicile in Prachuap Khiri Khan Province. In addition, 459 outsourcing employees were also employed.



Support Products and Services from Bangsaphan Communities

SSI supported local products manufacturing groups of the communities located in Bangsaphan District by purchasing local products and goods from various career groups in Bangsaphan District, with total value of approximately Baht 290 million and it is expected that in 2020, the purchase value will increase to Baht 300 million.

Safeguarding and Upgrading the Environmental Quality

SSI puts strong emphasis on responsibility to the environment and natural resources. Apart from supervising the production process to ensure that pollutant emitted from the production processes will not have any negative impact to quality of life and health of the employees and the local people, the Company also collaborated with relevant agencies to arrange the environmental awareness promotions and campaigns continually. There were 2,535 people participating in environmental conservation activities.

SSI Beach Clean-Up

The executives and staff from SSI and Sahaviriya Group, together with Mae Ramphueng Sub-district Administration Organization, hotel and business entrepreneurs, students and people in Bangsaphan District participated in “SSI Beach Clean-Up Project” for 11 consecutive years as a part of the World Environment Day, on the 5th of June of every year in order to participate in natural and environmental conservation campaign by jointly collect littering garbage on Mae Ramphueng Beach in Mae Ramphueng Sub-district, Bangsaphan District, Prachuap Khiri Khan Province covering areas of 3 kilometers. For this year, there were 973 people participated and about 1,632 kilograms of garbage could be collected. This year, main topic campaign of the United Nations Environment Program (UNEP) is “Beat Air Pollution” and slogan of this year’s campaign is “Stop smog and poisonous air for the quality of life and environment” to encourage everybody to realise the value of beauty, importance of nature and environmental conservation and to protect this planet.

Bangsaphan Car Free Day

SSI joined forces with SSI Group arranged “Bangsaphan Car Free Day 2019” on 22 September 2019. This project has been arranged for 9th consecutive years with aim to raise awareness of global warming among people in Bangsaphan District, reduce energy usage and support bicycle riding for good health. The 11-km bicycle ride trip attracted 367 people to cycle back and forth from Bangsaphan District Office to Bangsaphan Wittaya School. In addition, Bangsaphan people were asked to stop using motorised vehicles for 30 minutes from 8.00 - 8.30 AM. This activity helped reduce 1,412.95 kilograms of carbon dioxide equivalent (KgCo_{2e}). Combined amount of carbon dioxide emission reduction resulted from this activity since 2011 to date totaled 21,807.87 kilograms of carbon dioxide equivalent (KgCo_{2e}).

Moreover, SSI and SSI Group also arranged Ride for Smile Project, a project under Two Wheels Preserve Bangsaphan Project, to encourage people in Bangsaphan District to join bicycle trips for good health, reduce energy usage and create social contribution. In 2019, Ride for Smile Project has been held 3 times with total 271 participants and they could help reduce approximately 1,290.48 kilograms of carbon dioxide equivalent (KgCo_{2e}).

Cycling Trip to Plant Trees to His Majesty King Bhumibol Adulyadej The Great

SSI collaborated with local people in Bangsaphan District to arrange a “cycling trip to plant trees to honor the late King Bhumibol Adulyadej” to help increase green space and also raise awareness among local people to realise the importance of tree planting and energy reduction usage.

Eight cycling trips to plant trees have been arranged: Tham Kiriwong Temple in Thongchai Sub-district; Tung Kee Tai Mount in Phong Prasat Sub-district; Khaowong Cave in Kamnerd Noppakhun Sub-district; Tung Tub Tong Abbey in Ronthong Sub-district; Ban Chamaung’s public area in Phong Prasat Sub-district; Ban Nongtaja’s public area in Kamnerd Noppakhun Sub-district and Sufficiency Economic Center, Ban Fai Tha, Phong Prasat Sub-district and the 8th area arranged in 2019 was Ban Thungnoon’s public area, Moo. 10, Phong Prasat Sub-district.





Youth Conservation Camp

SSI, in cooperation with the Prachuap Khiri Khan Primary Educational Service Area 1, organised the 14th Youth Conservation Camp with aims to instill green heart consciousness mind, to conserve natural resources and environment and to cultivate volunteer spirit through the established learning stations. This year, there were 104 students in Prathom Suksa 5 from 26 schools in the areas participated in this project which was held at Ban Tha Kham School, Mae Ramphueng Sub-district. This project has been held for 14 times and has 1,344 youth conservationist networks, in total.



Love the King, Conserve Bangsaphan Project

SSI and SSI Group joined hands with the Mae Ramphueng Sub-District Administration Organization arranged the community development activities on auspicious occasion of the birthday of His Majesty King Maha Vajiralongkorn Phra Vajiraklaochaoyuhua on 28 July 2019 under "Love the King, Conserve Bangsaphan Project" by emphasising on community's environmental development and making merit by following the ideas of His Majesty King Bhumibol Adulyadej The Great in conserving natural resources and environment. Activities performed including making campaign to raise awareness of Bangsaphan people in conservation of local environment, demonstrate unity and cooperation among the public organisation, SSI Group and Bangsaphan people in release 670,000 young aquatic animals to restore abundance of coastal resources, increase food sources and number of aquatic animals to increase income to the fishermen, plant 67 trees and collect garbage along the beach. There were 1,107 people participated in these activities which were held along the beach at Ban Don Sumran.

Social, Cultural and Religious Promotion Activities

Activities on Elderly Day

SSI supported gifts and took part in 2019 Elderly Day Activities in Bangsaphan District, Mae Ramphueng Sub-district Administration Organization, Kamnerd Noppakhun Sub-district Administration Organization and Thong Mongkol Sub-district Administration Organization in order to preserve cultural traditions and express gratitude to the elderly. Activities performed were sprinkling water onto the Buddha images, pouring water onto the elderly' hands including arranging recreation and exercise activities for the elderly.

2019 National Children's Day in Bangsaphan

SSI supported activities on National Children's Day together with Mae Ramphueng Sub-district Administration Organization, Kamnerd Noppakhun Sub-district Administration Organization, Phong Prasat Sub-district Administration Organization, Chaikasem Sub-district Administration Organization, Ban Krood Municipal District, Ban Thakam School, Wat Ban Na Phak Khung School, Ban Donthong School, Ban Huaykaew School, Ban Khaoman School, Matthayom Noppakun School, Ban Tham Khao Noi School, Bangsaphan Kindergarten, Ban Don Sumnak School, Wat Tham Kiriwong School, Wat Donyang School, Bangsaphan District and Ban Chang Phruak School, Bangsaphan Noi District.

Support Community Activities

SSI jointly supported the arrangement of activities within the communities to strengthen good relationship and for continual development of communities covering 7 sub-districts in Bangsaphan District and nearby areas which benefited more than 10,000 community people. Activities supported were "See Sun Run Sea", "Run for the Sea" which was a joint activity with the Thai fisheries, Education Fund Raising with the schools, religious activities, student sport events of Bangsaphan District, Prachuap Khiri Khan Travel Event, Miracle City of Three Gulfs, Bangsaphan Tourism Event, Golden City Saga, Crash Helmet Draw Lot Project, and etc.

SSI Arsa Project

"SSI Arsa Project" is a volunteering project, that SSI staff and executives jointly participated in activities to help the society and community in Bangsaphan District.



Instilling Corporate Volunteering Culture

In 2019, SSI Arsa had arranged 22 volunteering activities under “25th Anniversary of SSI, 250 Virtues” Project (including 1 SSI Group Arsa for Bangsaphan Development project).

**SSI Arsa had arranged
22 volunteering
activities under
“25th Anniversary
of SSI,
250 Virtues” Project**

The number of SSI Arsa Volunteers involved totaled

1,025

or

8,104 service hours,

and the number of volunteers from the community totaled

2,552

or

20,336 service hours.

25th Anniversary of SSI, 250 Virtues: 22 Virtues

The 197th Virtue: Clean-up and restoration of Mae Ramphueng beach

The 198th Virtue: Improve and repair filtration of village water supply, Moo. 2, Ban Na Phak Khung, Mae Ramphueng Health Promoting Hospital

The 199th Virtue: Construct footpath for the disabled, Bangsaphan Excise Office

The 200th Virtue: Renovate landscape and paint priest' dining hall of Don Yang Temple

The 201st Virtue: Renovate landscape and repair toilet doors of Wat Ban Na Phak Khung

The 202nd Virtue: Renovate landscape around Khao Tham Ma Rong Temple in preparation for holy water fetching ceremony, Phong Prasat Sub-district

The 203rd Virtue: Lay concrete floor of multi-purpose hall, Purakum Abbey

The 204th Virtue: Paint fence and sign of Ban Tham Kiriwong Health Promoting Hospital

The 205th Virtue: Paint school building and tidy-up cable system, Ban Huaysaikao School

The 206th Virtue: Improve landscape around Ma Rong Village to commemorate the coronation ceremony of King Rama X at Ma Rong Village Hall

The 207th Virtue: Paint village meeting hall, Moo. 2, Ban Hin Gong

The 208th Virtue: Enlarge canteen, Ban Tham Khao Noi School

The 209th Virtue: Make compost and hydroponics vegetable bed, TorChorDor Ban Kirilom School

The 210th Virtue: Repair cremation boat, Chaiyaphoom Temple

The 211st Virtue: Improve and repair signpost of Ban Saphan (Ban Lang) School

The 212nd Virtue: Lay concrete floor of multi-purpose hall and renovate landscape of Wang Yao Abbey

The 213rd Virtue: Renovate and repair crematorium, Kao Both Temple, Royal Monastery

The 214th Virtue: Paint fence of Ban Hin Gong School

The 215th Virtue: Kon Lhek jointly constructed lawn and sport ground for the youth

The 216th Virtue: Construct Sufficient Economic Learning Center Building, Moo. 1, Fai Tha Village

The 217th Virtue: Paint school fence and small children's playground, Ban Thong In School

The 218th Virtue: Improve landscape around of Nurun I-man Mosque

SD Performance

1. Economic Performance Table

GRI	Required Data	Unit	2017	2018	2019
Economics					
G4-EC1	Economic performance				
	Sales and service revenues	Million Baht	25,332	31,428	25,199
	HRC Sales Volume (ktons)	Million Baht	1,285	1,441	1,270
	EBITDA	Million Baht	6,115	1,665	(1,254)
	Net profit (loss)	Million Baht	4,535	194	(1,803)
	Economic value distributed				
	Suppliers*	Million Baht	2,190.00	2,722.00	3,340.00
	Employees**	Million Baht	712.21	737.00	815.00
	Financial Institutions (Interest Expense)	Million Baht	1,015.08	898.00	798.00
	Community, Society and Environment***	Million Baht	6.40	16.00	15.00
	Government (Tax)****	Million Baht	89.01	91.00	132.00

* Consist of value of general trading transactions in goods

** Consist of salary, wages, welfare, provident fund, social security and other expenses for HR development

*** Consist of expenses in community and environment development

**** Consist of corporate income tax, local maintenance tax, property tax, signboard tax and withholding tax

GRI	Required Data	Unit	2017	2018	2019
Customer satisfaction					
G4-PR5	Target	%	75	75	75
	Customer satisfaction				
	• Domestic market group A1	%	78	-	-
	• Domestic market group A2	%	78	-	-
	• Domestic market group A3	%	82	-	-
	• Domestic market group B2	%	81	-	-
	• Market S1 - Automotive group	%	-	80	81.24
	• Market S2 - LPG Cylinders group	%	-	76	83.00
	• Market S3 - Trader group	%	-	78	83.78
	• Market S4 - Steel Pipe	%	-	82	82.16
	• Market S5 - SSI Group	%	-	No survey	72.25
	• Market S6 - HAEA Electric Appliance group	%	-	72	74.80

2. Environment Performance Table

GRI	Required Data	Unit	2017	2018	2019
Energy					
G4-EN3	Total energy consumption	Megajoule (MJ)	2,956,830,885.09	3,361,963,337.91	2,942,208,231.61
	Direct energy consumption	Megajoule (MJ)	2,274,012,747.59	2,588,534,193.39	2,211,952,968.69
	• Benzene consumption	Liter	53,929,041.00	61,182,666.50	52,274,163.00
	• Diesel consumption	Liter	638,601.00	810,886.00	711,306.00
	• LPG consumption	Liter	489,032.19	664,568.03	560,815.36
	Indirect energy consumption	Megajoule (MJ)	682,818,137.51	773,429,144.53	730,255,262.92
	• Electricity consumption	Megawatt Hour (MWh)	189,671.70	214,841.43	202,848,684.14
G4-EN6	Total amount of saved energy	Megajoule (MJ)	41,427,807.00	46,285,245.00	99,733,341.34

GRI	Required Data	Unit	2017	2018	2019
CO₂ Emission					
G4-EN15	CO ₂ Emission	Tons CO ₂	257,634.00	290,735.00	258,351.00
Water					
G4-EN8	Water consumption from production process	million cubic metres	0.99	1.18	1.15
Wastes					
G4-EN2	Percentage of materials used that are recycled input materials	%	98.14	99.32	100.00
G4-EN23	Percentage of waste by waste incineration	%	1.65	0.60	0
	Percentage of waste by landfill	%	0.21	0.08	0
Transport					
G4-EN30	Number of company's vehicles or leased vehicles for product transportation				
	• Short distance truck	Cars	59	60	66
	• Long distance truck	Cars	674	812	816
	Number of transportation				
	• Short distance truck	Trips	8,457	11,761	10,122
	• Long distance truck	Trips	19,620	29,634	24,137

3. Total Workforce Table

GRI	Required Data	Unit	2017	2018	2019
Hiring					
G4-LA1	Number of employees				
	• Number of permanent employees	Person(s)	1,154	1,140	1,177
	• Number of contracted employees	Person(s)	146	160	156
	By gender				
	• Male	Person(s)	929	917	948
	• Female	Person(s)	225	223	229
	By age				
	• Over 50 years old	Person(s)	96	132	123
	• 30 - 50 years old	Person(s)	805	763	803
	• Below 30 years old	Person(s)	253	245	251
	By employee structure				
	• Executive	Person(s)	47	51	56
	• Managerial	Person(s)	192	196	202
	• Supervisory	Person(s)	457	449	473
	• Operational	Person(s)	458	444	446
	Employee turnover				
	Total turnover	Person(s)	65	60	83
	Total turnover rate	% of total employee turnover	5.63	5.26	7.05
	By gender				
	• Male	Person(s)	46	44	52
	• Female	Person(s)	19	16	31
By age					
• Over 50 years old	Person(s)	4	2	9	
• 30 - 50 years old	Person(s)	43	28	42	
• Below 30 years old	Person(s)	18	30	32	

GRI	Required Data	Unit	2017	2018	2019
Newly hired employees					
	Total number of new employee	Person(s)	138	123	121
	Total new employee rate	% of total employee	11.95	10.78	10.28
By gender					
	• Male	Person(s)	88	88	84
	• Female	Person(s)	50	35	37
By age					
	• Over 50 years old	Person(s)	1	5	1
	• 30 - 50 years old	Person(s)	66	38	46
	• Below 30 years old	Person(s)	71	80	74
Maternity and parental leave					
G4-LA3	Number of employee who take maternity leave	Person(s)	5	8	13
	Number of employees returning to work after leave	Person(s)	5	8	13
Training and education					
G4-LA9	Average training hour				
By branch					
	• Bangkok office	Hours/ Person/Year	22.53	20.97	24.77
	• SSI Bangsaphan Plant	Hours/ Person/Year	19.86	34.81	39.16
By employee structure					
	• Managerial - Executive level	Hours/ Person/Year	28.89	51.98	40.33
	• Operational - Supervisory level	Hours/ Person/Year	30.65	38.30	22.10
Anti-Corruption					
G4-S04	Number of employees who have completed ethics training	Person(s)	117	210	84

GRI	Required Data	Unit	2017	2018	2019
Code of conduct					
	Violation of Business Ethics	Cases	-	-	-
Talent attraction and retention					
	Percentage of employees who passed formal performance reviews	%	100.00	100.00	100.00
	Employee satisfaction	%	-	-	-
	Goal	%	-	-	-
	Percentage of employees who take engagement survey	Person(s)	819	839	831
	• Bangkok Office	%	11	15	6
	• SSI Bangsaphan Plant	%	89	85	94
	Score				
	• Total score of employee engagement with the Company	%	55.43	41.53	71.60
	• Score of employee engagement with Bangkok Office	%	33.71	20.97	13.46
	• Score of employee engagement with SSI Bangsaphan Plant	%	58.08	45.10	75.48

4. Occupational Health and Safety Performance Table

GRI	Required Data	Unit	2017	2018	2019
Occupational health and safety					
G4-LA6	Injury Frequency Rate (IFR)				
	• Employees and contractors	case/a million working hours	2.64	1.67	0.32
	Lost Time Injury Frequency Rate (LTIFR)				
	• Employees and contractors	case/a million working hours	0.66	0.31	0

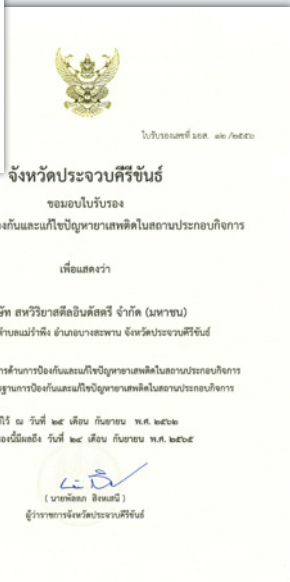
LTIFR: (Number of Lost Time Injury x 1,000,000) / Total Working Hours

IFR: (Number of Injury x 1,000,000) / Total Working Hours

Awards and Recognitions

4 July 2019

Bronze Medal Level Award of Zero Accident Campaign 2019
 Thailand Institute of Occupational Safety and Health
 (Public Organization), Ministry of Labour



19 December 2019

The National Outstanding Industrial Establishment Award in Labour Welfare/Relations Category in 15 consecutive year type (2005 - 2019)
 Department of Labour Protection and Welfare,
 Prachuap Khiri Khan Province

Certificate of Prevention and Solution to
 Drugs Problems in an Establishment Standard
 under the White Factory Project
 Department of Labor Protection and Welfare,
 Prachuap Khiri Khan Province

About This Report

Scope of the Report

The 2019 SD Report of Sahaviriya Steel Industries Public Company Limited (SSI) is the 11th issue that the Company has published to inform shareholders, stakeholders, investors and the public. This issue has added information about stakeholder engagement and their expectation which will be applied to set up a clear SD framework with economic, social and environmental consideration.

This issue has covered all business strategy, policies, guideline, and business performance in economic, social and environmental aspect, mainly about SSI and some parts connected to its subsidiaries, during 1 January 2019 to 31 December 2019, to ensure that the CSR guidelines are delivered consistently throughout the Group.

Moreover, SSI determines to expand the report to cover more areas in the future.

This report has been generated in accordance with Global Reporting Initiative (GRI) G4 which is an international initiative. The report is disseminated in written reports and online at www.ssi-steel.com to allow everyone easy access to the information.



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Stakeholder Engagement and Sustainability

SSI has channels for appealing against illegal action, including actions which will damage whistle-blowers and the Company. Moreover, the Company has policies to protect the whistle-blowers and the appeal will be monitored and the facts assessed. These issues will be fixed, while the whistle-blowers and the Audit Committee will be informed about its progress. In addition, the results of the Good Corporate Governance Committee's tasks will be reported to the Board of Directors for acknowledgement twice a year.

There are communication channels that the Company has applied to communicate with the main 7 groups of stakeholders to create understanding and allow them to be part of the operation. Their opinion will be assessed to appropriately respond to all stakeholders and continuously enhance for sustainable development.

Stakeholders Engagement and Expectation

Group of Stakeholder	Expectations	Engagement Method	No. of time engaged
Shareholders and Investors	<ul style="list-style-type: none"> • Good corporate governance • Risk management • Good performance and return • Business Rehabilitation Plan Progress • Anti-corruption policy 	Annual general meeting	NA
		Annual report	Annual
		Investor relations activities	As needed
		SET's website	Continuous
		Management Discussion and Analysis	Quarter
		SSI's website	Continuous
		Strategic Partner Meeting	Quarter
Customers	<ul style="list-style-type: none"> • Product quality • Technical supports • On time delivery • Service quality • Appropriate access to product • Correct product information • Products that promote the society and environment 	Receives feedback from customers and meeting to get the customers need	Continuous
		Site visit, Meeting	Continuous
		Announcement Quality Policy	Continuous
		Customers Satisfaction Survey and feedback	Continuous
		Inspection and site visit	Continuous
		Website, Exhibition, and Brochures	Continuous
		Website	As require
Business Partners and Suppliers	<ul style="list-style-type: none"> • Quality promotion • Technical support • Co-management of occupational health, safety and environment 	Annual seminar	Continuous
		Meeting	Continuous
		Recruitment and selection process	Continuous
		Advisory system	Continuous

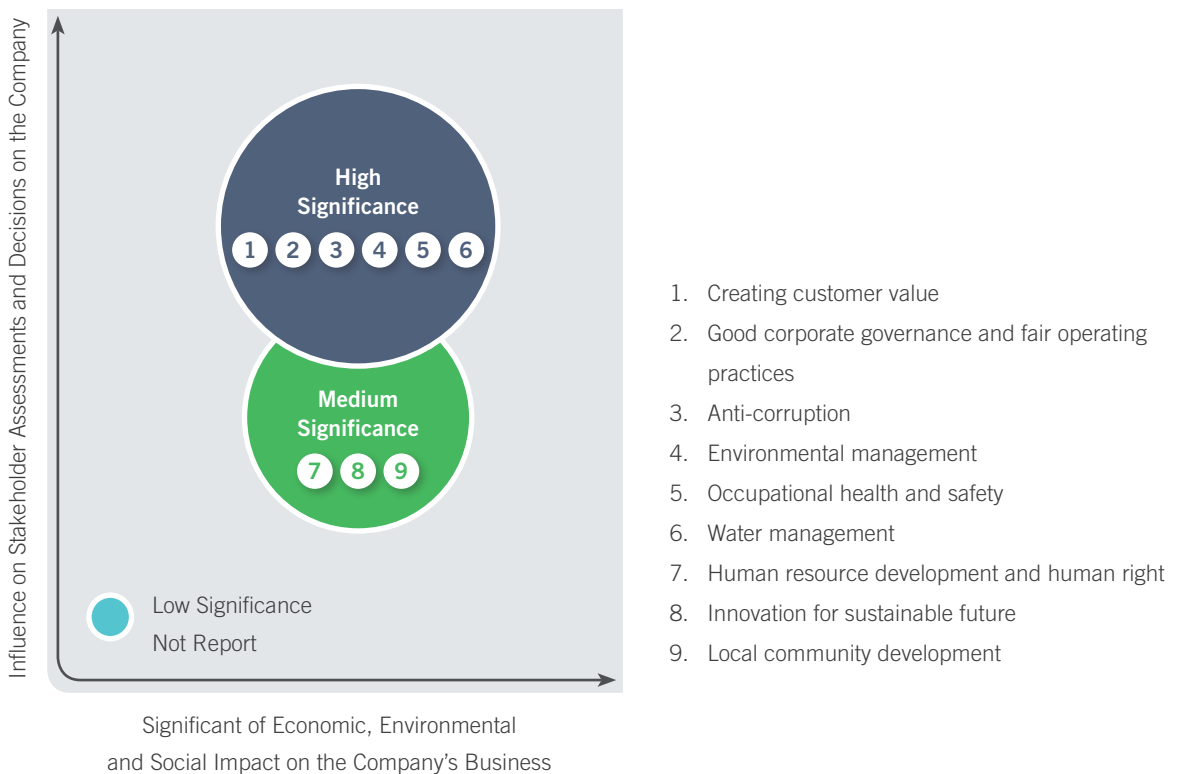
Group of Stakeholder	Expectations	Engagement Method	No. of time engaged
Competitors	<ul style="list-style-type: none"> Fair competition Avoiding dishonest or inappropriate access confidential information of competitors Not discrediting competitors 	Conference	Continuous
		Association membership	Continuous
		Association and sharing of experiences	Continuous
Employees	<ul style="list-style-type: none"> Environment, health and safety management in workplace Human resource development Fair evaluation and appropriate remuneration Communications Equal employment opportunity and anti-discrimination in the workplace Welfare 	Meeting	Continuous
		Internal program development	Continuous
		Employee relations activities	Continuous
		Workplace visit	Continuous
		Internal radio broadcasting	Continuous
		Intranet	Continuous
		E-mail	Continuous
System of complaint	Continuous		
Government	<ul style="list-style-type: none"> Job creation Fair competition Safety at work Additional investment National economic promotion 	Meeting and sharing information	Continuous
		Membership and participation in activities	As needed
		Meeting and providing information	As needed
Communities	<ul style="list-style-type: none"> Community development Environmental, occupational health and safety management Additional investment Knowledge transferring Community activity support Product transportation 	Community visit	Continuous
		Monthly meeting	Continuous
		Opinion leader meeting	Continuous
		Activity support	Continuous
		Sponsorships	Continuous
		Communication activities	Continuous
		Opinion survey	As needed
		System of complaint	Continuous

Sustainability Evaluation

SSI has conducted this report, by considering important issues which cover risk assessment, current and future business opportunities, in accordance with Global Reporting Initiative (GRI) and information from its stakeholders. This report was assessed according to GRI (G4) and was grouped in “Core” level, by revealing Material Aspect, which is shown in GRI G4 Content Index. Details of the assessment are as follows:



Results of Significant Issue Assessment 2014 Table



GRI

Content Index

General Standard Disclosures

● Fully Reported ● Partially Reported ○ Not Reported

GRI Aspect	Indicator	Level of Reporting	Page		Note
			SD Report	Annual Report	
Strategy and Analysis	G4-1	●	2 - 5	4 - 7	-
	G4-2	●	2 - 5	24 - 29	-
Organisational Profile	G4-3	●	8 - 9	12 - 13	-
	G4-4	●	-	15 - 18	-
	G4-5	●	-	30	-
	G4-6	●	-	-	-
	G4-7	●	8 - 9	12 - 13	-
	G4-8	●	7, 14 - 16	15 - 18	-
	G4-9	●	7, 59	8 - 9	-
	G4-10	●	41, 59 - 61	-	-
	G4-11	●	-	-	Not applicable
	G4-12	●	10 - 13	15 - 18	-
	G4-13	●	-	4 - 7, 10 - 11	-
	G4-14	●	2 - 5, 14 - 34	24 - 29	-
	G4-15	●	2 - 5, 34, 38, 46 - 57	10 - 11	-

GRI Aspect	Indicator	Level of Reporting	Page		Note
			SD Report	Annual Report	
Organisational Profile	G4-16	●	38 - 40	-	<ul style="list-style-type: none"> Private Sector Collective Action Coalition Against Corruption (CAC) The Association of Thai Hot Rolled Flat Steel (ATHF) The Association of Thai Cold Rolled Flat Steel (ATCF) Thailand Structural Steel Society (TSSS) South East Asia Iron & Steel Institute (SEASI) The Federation of Thai Industries Thailand Business Council for Sustainable Development (TBCSD)
Identified Material Aspects and Boundaries	G4-17	●	-	19	-
	G4-18	●	63 - 66	-	-
	G4-19	●	63 - 66	-	Results of Significant Issue Assessment 2019
	G4-20	●	63 - 66	-	The Aspect is material within the organisation, refer to "About This Report" and "Assessment of SSI's Key Sustainability Issues"
	G4-21	●	35, 63 - 66	-	page 35 "Result of Stakeholder Survey" and page 63 - 66 "About This Report"
	G4-22	●	-	-	-
	G4-23	●	2 - 5	4 - 7, 10 - 11	-
Stakeholder Engagement	G4-24	●	11 - 13, 64 - 65	-	Stakeholder Engagement
	G4-25	●	11 - 13, 64 - 65	-	Stakeholder Engagement
	G4-26	●	11 - 13, 64 - 65	-	Stakeholder Communication Process
	G4-27	●	35, 64 - 65	-	Stakeholder Communication Process

GRI Aspect	Indicator	Level of Reporting	Page		Note
			SD Report	Annual Report	
Report Profile	G4-28	●	63	-	-
	G4-29	●	63	-	-
	G4-30	●	63	-	-
	G4-31	●	63	-	-
	G4-32	●	56 - 61	-	-
	G4-33	●	66	139 - 140	Our financial data are audited by Independent Auditor.
Governance	G4-34	●	10 - 13	87 - 95	-
	G4-35	●	13	97 - 99	-
	G4-36	●	13	97 - 99	-
	G4-37	●	-	70 - 71	-
	G4-38	●	-	97 - 99	-
	G4-39	●	-	49 - 60	-
	G4-40	●	-	99 - 100	-
	G4-41	●	-	89 - 90	-
	G4-42	●	12 - 13	3 - 7, 74 - 90	-
	G4-43	●	-	95	-
	G4-44	●	12 - 13	93	-
	G4-45	●	-	24 - 29, 74 - 76	-
	G4-46	●	-	24 - 29, 74 - 76	-
	G4-47	●	12 - 13	72 - 87	-
	G4-48	●	66	-	-
	G4-49	●	12 - 13	72 - 73	-
	G4-50	●	-	-	In 2019, there was zero case.
	G4-51	●	-	66 - 69, 93	-
	G4-52	●	-	66 - 69, 93	-
	G4-53	○	-	93	-
G4-54	○	-	-	Not applicable	
G4-55	●	-	-	Not applicable: Proprietary information	
Ethics and Integrity	G4-56	●	1, 10 - 13	-	-
	G4-57	●	38 - 40	84 - 85	-
	G4-58	●	38 - 40	84 - 85	-

Specific Standard Disclosures Overview

GRI Aspect	Location of Disclosure	Indicator	Level of Reporting	Page	
				SD Report	Annual Report
General	SSI	G4-Disclosures on Management Approach (DMA)	●	2 - 5, 10 - 13	-

Economic

GRI Aspect	Location of Disclosure	Indicator	Level of Reporting	Page	
				SD Report	Annual Report
Economic Performance	SSI	G4-EC1	●	2 - 5, 14 - 16, 56 - 61	128 - 137
	Partner	G4-EC2	●	16 - 27	-
	Customer	G4-EC3	○	Not applicable	
	Community	G4-EC4	○	-	-
Market Presence	SSI	G4-EC5	○	-	-
		G4-EC6	○	-	-
Indirect Economic Impacts	SSI	G4-EC7	○	-	-
	Community	G4-EC8	●	2 - 5, 14 - 16, 56 - 61	-
Procurement Practices	SSI	G4-EC9	●	2 - 5, 4, 37, 50	-

Environmental

GRI Aspect	Location of Disclosure	Indicator	Level of Reporting	Page	
				SD Report	Annual Report
Materials	SSI	G4-EN1	●	21	-
		G4-EN2	●	33, 58	-
Energy	SSI	G4-EN3	●	23 - 25, 57	-
		G4-EN4	○	Not applicable	
		G4-EN5	●	28 - 30	-
		G4-EN6	●	23	-
		G4-EN7	●	23	-
		G4-EN8	●	23 - 25, 58	-
Water	SSI	G4-EN9	●	23 - 25, 58	-
		G4-EN10	●	23 - 25	-
		G4-EN11	○	-	-
Biodiversity	Community	G4-EN12	○	-	-
		G4-EN13	●	26	-
		G4-EN14	●	26	-
		G4-EN15	●	28 - 30, 58	-
Emission	SSI	G4-EN16	●	28 - 30, 58	-
		G4-EN17	○	-	-
		G4-EN18	●	28 - 32	-
		G4-EN19	●	28 - 34	-
		G4-EN20	○	-	-
		G4-EN21	●	28 - 32	-
		G4-EN22	●	23 - 25	-
Influents and Waste	SSI	G4-EN23	●	33, 58	-
		G4-EN24	○	-	-
		G4-EN25	○	-	-
		G4-EN26	○	-	-
		G4-EN27	●	20	-
Product and Services	SSI	G4-EN28	○	2 - 5, 36 - 37	4 - 7
		G4-EN29	○	-	-
Compliance	SSI	G4-EN29	○	-	-

GRI Aspect	Location of Disclosure	Indicator	Level of Reporting	Page	
				SD Report	Annual Report
Transport	SSI	G4-EN30	●	20, 58	-
Overall		G4-EN31	○	-	-
Supplier Environmental Assessment	SSI	G4-EN32	●	26	-
		G4-EN33	●	20	-
Environmental Grievance Mechanisms	SSI	G4-EN34	●	35, 64 - 65	-

Social

GRI Aspect	Location of Disclosure	Indicator	Level of Reporting	Page	
				SD Report	Annual Report
Employment	SSI	G4-LA1	●	41 - 45, 59 - 61	-
		G4-LA2	●	44	-
		G4-LA3	●	59	-
Relations	SSI	G4-LA4	○	-	-
Occupational Health and Safety	SSI	G4-LA5	●	17 - 19	-
		G4-LA6	●	3, 5, 18 - 19, 61	-
		G4-LA7	○	-	-
		G4-LA8	○	-	-
Training and Education	SSI	G4-LA9	●	17 - 19, 45, 60	-
		G4-LA10	●	-	-
		G4-LA11	●	61	-
Diversity and Equal Opportunity		G4-LA12	●	40, 59 - 61	-
Equal Remuneration for Women and Men	SSI	G4-LA13	○	-	-

Labor Practices and Decent Work

Supplier Assessment for Labor Practices	SSI Supplier	G4-LA14	●	SSI found no illegal actions from performing supplier assessments, auditing and evaluation.	
		G4-LA15	○	-	-
Labor Practices Grievance Mechanisms	SSI	G4-LA16	●	SSI has received no significant complaints, affecting the business.	

GRI Aspect	Location of Disclosure	Indicator	Level of Reporting	Page	
				SD Report	Annual Report
Human Rights					
Investment	SSI	G4-HR1	○	-	-
		G4-HR2	●	43, 59	-
Non-discrimination	SSI	G4-HR3	○	-	-
Freedom of Association and Collective Bargaining	SSI	G4-HR4	●	10 - 13	-
Child Labor	SSI	G4-HR5	●	41, 59 - 61 No case of child labor in our operations.	
Forced or Compulsory Labor	SSI	G4-HR6	●	41, 59 - 61 No case of forced labor in our operations.	
Security Practices	SSI	G4-HR7	○	-	-
Indigenous Rights	SSI	G4-HR8	○	-	-
Assessment	SSI	G4-HR9	○	-	-
Supplier Human Rights Assessment	SSI Supplier	G4-HR10	●	SSI found no illegal actions from performing supplier assessment, auditing and evaluation.	
		G4-HR11	○	-	-
Human Rights Grievance Mechanisms	SSI	G4-HR12	○	-	-

Society

GRI Aspect	Location of Disclosure	Indicator	Level of Reporting	Page	
				SD Report	Annual Report
Local Communities	SSI	G4-DMA	●	36	-
		G4-S01	●	4 - 7, 46 - 55	-
		G4-S02	○	4 - 7, 46 - 55	-
Anti-corruption	SSI	G4-S03	○	38 - 40	-
		G4-S04	●	38 - 40, 60 - 61	-
		G4-S05	○	38 - 40 In 2019, there was no corruption case.	
Public Policy	SSI	G4-S06	○	-	-
Anti-competitive Behavior	SSI	G4-S07	○	-	10 - 11
		G4-S08	○	-	-
Supplier Assessment for Impacts on Society	SSI	G4-S09	○	SSI found no illegal actions from performing supplier assessments, auditing and evaluation.	
		G4-S010	○	-	-
Grievance Mechanisms for Impacts on Society	SSI	G4-S011	○	-	-

Product Responsibility

GRI Aspect	Location of Disclosure	Indicator	Level of Reporting	Page	
				SD Report	Annual Report
Customer Health and Safety	SSI	G4-PR1	○	-	-
		G4-PR2	○	-	-
Products and Service Labeling	SSI	G4-PR3	○	-	-
		G4-PR4	○	-	-
		G4-PR5	●	57	-
Marketing Communications	SSI	G4-PR6	○	-	-
		G4-PR7	○	-	-
Customer Privacy	SSI, Partner, Customer	G4-PR8	●	SSI strictly protects confidential information of customers (as promagated in the Business Ethics of the Company). In 2019, there was no substantiated complaint regrading breaches of customer privacy and losses of customer data, CSR report page 11 - 12, 35.	
Compliance	SSI, Partner, Customer	G4-PR9	●	In 2019, there was no fines for non-compliance with laws and regulations concerning the provision and use of products and services.	

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