

7.8 Business process innovations for sustainability

Somboon Advance Technology has been committed to enhancing the Company's innovation competency to improve business operations and processes, by cultivating an innovative culture among employees and fostering joint ventures to develop innovative products and work processes. The Company aims to promote innovative management to respond to market-focused business while maintaining competitiveness, and to generate appropriate economic, social, and environmental benefits.



Management Approach



Amidst the current global changes in technology, environment, and economic conditions, business operations have been significantly impacted, requiring companies to adapt to the rapidly changing landscape. In response, the Company has established innovative operational guidelines as follows.

1. Culture of Innovation

A culture of innovation can have a sustainable impact when there is a continuous pursuit of development and a never-ending discovery of new ideas. To foster such innovation, our company has established a dedicated unit to oversee continuous development activities. We organize QCC/Kaizen and Lean Manufacturing projects every year for employees at all levels, encouraging them to adopt an improvement mindset in their work. This has resulted in an organizational culture that generates innovative projects conceived by our employees every year, as evidenced by the following examples:



QCC Project :

A solution for thin edge casting for the front axle part cover, a project by Somboon Malleable Iron Industrial Company Limited

➔ Lean Manufacturing Project :

An application of ECRS principles to reduce the production time for cast molds' cores. The Company has also held an Innovation Day for employees interested in new technologies and innovations from all companies within the Somboon Group who can exchange knowledge with external participants from educational, government, and industrial sectors.



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Performance

Initiative	Goal 2022 No. of Projects	Performance 2022 No. of Projects	Hard Saving (THB/year)
QCC	150	150	10,630,415
Kaizen	1,708	1,708	14,178,095
Lean Manufacturing	15	15	27,064,043
Total	1,873	1,873	51,872,553



After years of continuous efforts to promote innovative development within the organization, Somboon Malleable Iron Industrial Company Limited has made an achievement this year by winning the first runner-up Silver award for Kaizen Suggestion System (KSS) at the Thailand Kaizen Award 2022. The award was organized by the Technology Promotion Association (Thailand-Japan) for the project titled “Pokayoke: Preventing diameter 6 injection without concentricity”.

Winning the first runner-up Silver award for Kaizen Suggestion System (KSS)



In addition, Somboon Malleable Iron Industrial Company Limited has also received the Golden Award in the “New Born” category of the Thailand Quality Prize Award 2022 (National level QCC), organized by the Technology Promotion Association (Thailand-Japan), for their project titled “Resolving Bracket Spider BW 65022302 Diameter (Ø) 44 MM Over Spect”.



รางวัล ชนะเลิศอันดับ1

Golden Award ในประเภทกลุ่ม New Born

2. Product innovations

The Company has formed a joint venture with Tron-E Technology Company Limited to establish Somboon Tron Energy Company Limited, a company focusing on assembling electric three wheelers for the transportation of small goods over short distances, with versatility and a priority on efficiency, safety, and environmental friendliness.



Due to the present global focus on climate change, Somboon Tron Energy Company Limited has acknowledged the significance of this issue and has developed electric three wheelers powered by clean energy and electricity, which have a much lower environmental impact than vehicles with combustion engines. The Company anticipates that this project will reduce greenhouse gas emissions by an average of 1,420 tCO₂eq/year.

Expected ESG benefits from product innovations

The reasons for selecting electric three-wheelers as an innovation in business development.



- There is support from the Thai government for the increased adoption of electric vehicles in the country.
- The logistics market in Thailand is expanding, but 4-wheel pick-up trucks fueled by gasoline are not as versatile.
- Three wheelers also uniquely reflect Thainess, making them stand out.

ESG Benefit



Environment

SAT has anticipated an expansion in the distribution of electric three wheelers.

It is estimated that the energy cost in the ecosystem will be reduced when replacing four-wheel vehicles powered by diesel gasoline with electric three wheelers for business owners and for Thailand.



Social

The use of electric three-wheelers will result in a reduction of **PM 2.5 fine particles released into the community.**

An increased employment rate in the **Ecosystem**



Good Governance

It is estimated that greenhouse gas emissions can be **twice** reduced by **1,420 tCO₂eq** per year when replacing four-wheel vehicles powered by diesel gasoline with electric three wheelers (equivalent to planting 130,635 trees).

3. Work process innovations

The company has formed a joint venture with Siasun Robot & Automation Company Limited, also known as SIASUN, from China. The joint venture, Somboon Siasun Tech Company Limited, has been committed to upgrading the industrial sector by introducing digital technologies and automatic systems to boost the efficiency of the production process and automatic storage at Somboon Forging Technology (SFT1) Limited as follows.



3.1 Robotic arm with 3D vision for material analysis

In the final step of the production process, when the finished products are ready to be stored in the warehouse, there is a need for continuous transportation. To address this need, the Company has adopted robotic arm technology and 3D camera automatic detection. This technology ensures the accuracy of the products through communication with 5G technology.



3.2 Unmanned Automated Guided Vehicles (AGVs)

The Company has adopted unmanned automated guided vehicles (AGVs) for warehouse usage, to enhance work efficiency and reduce the usage of LPG in traditional forklifts. These AGVs are responsible for taking over finished products from the robotic arm.

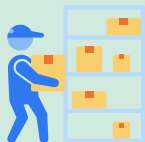










3.3 Smart warehouse (AS/RS warehouse)

To optimize space utilization, the company has implemented an ASRS (Automated Storage and Retrieval System), which is connected to robotic arms and AGVs to improve cost efficiency and work productivity. As a result, the lifting capacity has increased from 40 to 80 pallets per hour, effectively doubling the performance of both inbound and outbound automatic processes.



Expected ESG benefits from product innovations

Before	 <p>Manpower was needed for the transportation of automobile parts.</p>	 <p>Forklift trucks were used for the transportation of products to the warehouse.</p>	 <p>Conventional warehouses required significantly large storage space.</p>
After	 <p>3D Vision - Robots are used for transportation of automobile parts</p>	 <p>AGVS are used for transportation of products to the warehouse</p>	 <p>AS/RS Smart Warehouse</p>
ESG Benefit			
 <p>Environment</p> <p>The cost of energy usage by forklift trucks has been reduced by 60-80%</p>	 <p>Social</p> <p>The organization has achieved a reduction in the risk of accidents among its employees.</p> <p>By relieving employees of burdensome tasks, they can utilize their knowledge and skills in more productive roles.</p> <p>There is an opportunity for learning and adapting through the use of new innovations.</p>	 <p>Good Governance</p> <p>The Company's production efficiency and effectiveness have increased, resulting in enhanced competitiveness.</p> <p>The reduction of storage space required for products.</p>	

