Risk Management Status Report in 2021

Date: 2021.11.05

Risk Management Status Report in 2021

Feb, 2020

Risk Management System Development

- The Risk Management Policy and Procedures passed at 19th meeting of the 18th term of office of the board of directors on February 27, 2020
- Stipulation of a comprehensive risk management system and individual risk management units
- Stipulation of the categories of risk management and relevant

Oct, 2021

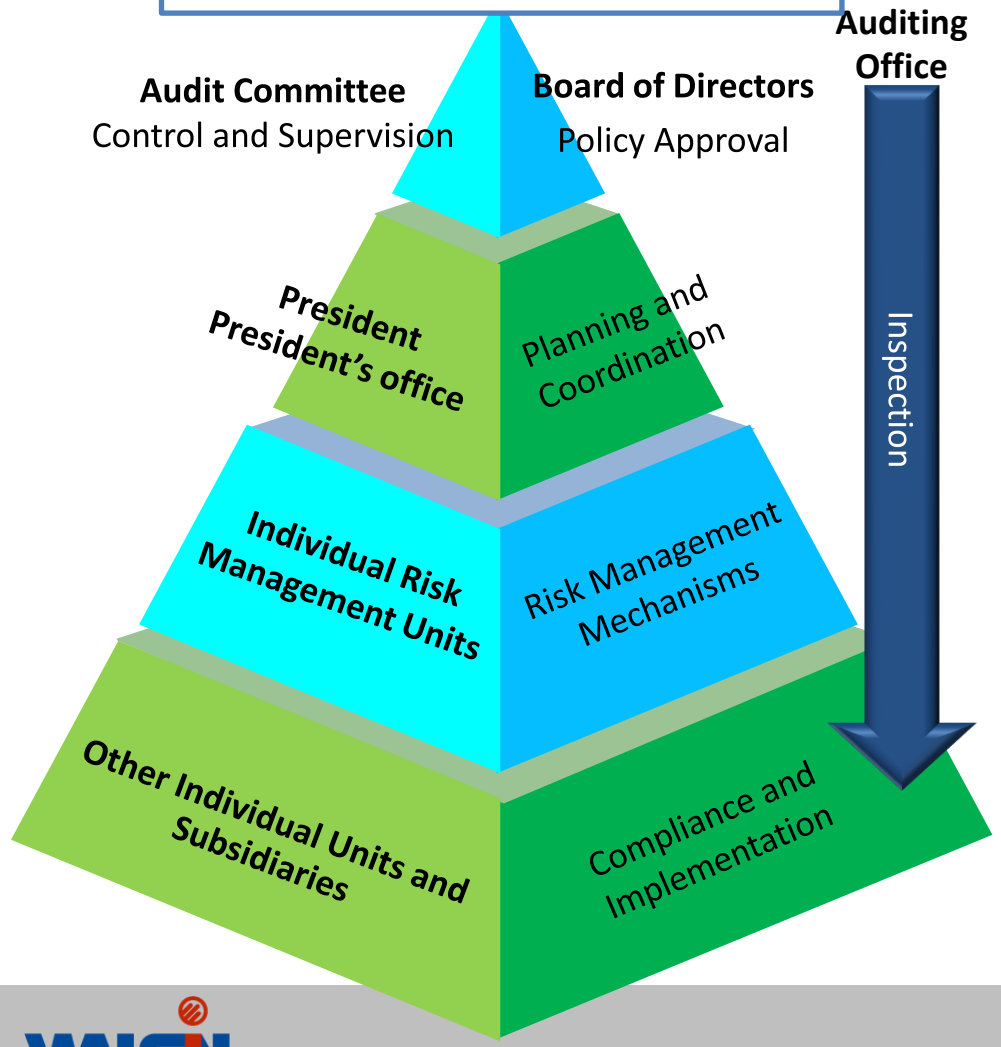
Review of Risk Categories on a Regular Basis and Risk Management Status Report

1. Report on Key Points of Management of Various Risks in 2021
2. Report on Management of Carbon Risks and Alignment with International Standards for Net Zero Carbon Emission

Comprehensive Risk Management Mechanism

➢ Factoring in its business and operating characteristics, Walsin Lihwa has identified 12 categories of its risks in 3 domains provided as follows. Such risks are included into risk management and the risk management status is subject to review on a regular basis.
The categories of risks in 2021 remained unchanged, and the details of how individual categories of risks were managed in 2021 are tabulated in the appendix.

Risk Management Organization Structure and Its Duties



Risk Management Categories

1. Corporate Governance and Economy — **8**

1. Strategic and Operating Risks
2. Legal Risks
3. Capital Expenditure Risks
4. Information Security Risks
5. Interest Rate Fluctuation Risks
6. Exchange Rate Volatility Risks
7. Risks Associated with Raw Material Prices and Supply Chains
8. Technology Risks

2. Environmental — **1**

9. Climate Change and Environmental Risks

3. Social — **3**

10. Management Risks
11. Occupational Safety Risks
12. Corporate Image Risks

Foci of Risk Management Implementation in 2021

1. Risk management policy development based on understanding of market and external environment changes, business objectives, and potential risks identified to strengthen responsiveness to risks
2. Real-time monitoring of existing risks through data and scientific analysis
3. Combination of risk management with daily business practices by consulting relevant domestic and foreign laws and regulations to enact and amend company bylaws to enable effective risk management
4. Promotion and education and training to strengthen risk awareness throughout the company
5. Risk management throughout the company reviewed and supervised by well-informed management

Challenges of Climate Emergency

- Human activities have disturbed the natural balance of greenhouse gases, and how to achieve net zero carbon emission is an inevitable challenge.
- 130 countries have declared to achieve net zero carbon emission by 2050 and so has Taiwan.
- The European Union has announced the Carbon Border Adjustment Mechanism (CBAM) and other economies are going to follow suit. A carbon levy is expected to be first imposed on the stainless steel industry.
- Big power consumers in Taiwan need to install renewable energy generation and storage facilities to provide at least 10% of the chartered capacity, while imposition of carbon management charges is being studied.
- International brand name companies require their supply chains to decrease carbon emissions and the stainless steel cannot be exempted from the requirement.

Planning for Net Zero Carbon Emission
(Responsible carbon emission: Category One and Scope Two)

(Greenhouse gases include CO_2, CH_4, N_2O, HFCs, etc., and 99.5% of the greenhouse gas emissions from Walsin Lihwa is CO_2.)

Emission Type (Tons of CO_2e/Year)			Taiwan	Mainland China	Approaches to Net Zero Carbon Emission
Category One	Direct Emissions	Natural Gas	139,000	39,000	1) Greenhouse gas inventory and energy management system development to decrease 1% of emissions every year
					2) Improvement of process availability and preventive maintenance to strengthen energy efficiency
					3) Study of electrification of combustion as an alternative process
					4) Oxygen-enriched combustion and process optimization to strengthen energy efficiency
					5) Carbon capture, utilization, and storage (CCUS), carbon sinking, and carbon studies
Category Two	Indirect Emissions	Power Consumption	213,000	180,000	1) Greenhouse gas inventory and energy management system development to decrease 0.5% of emissions every year
					2) Renewable energy implementation and purchase (Assessment of solar power and offshore wind power generation)
					3) Discharge coefficient reduction (Taiwan Power Company grid)
					4) Thorough inventory of motor efficiency and motor efficiency improvement
					5) Thorough inventory of all pneumatic systems and all pneumatic system efficiency improvement
					6) Alloy iron replaced by recycled materials i.e., scrap steel, and electrical energy replaced by chemical energy

Directions Planned for Net Zero Carbon Emission at Walsin Lihwa's Taiwan Plant Sites

Unit: In thousands of tons

	2021	2022	2023	202年	2025	2026	2027	2030	2040	2050
Responsible Carbon Emission	352	352	352	352	352	352	352	352	352	352
Category One Emissions	139	139	139	139	139	139	139	139	139	139
Energy management for carbon reduction	(1.4)	(1.4)	(1.4)	(1.4)	(1.4)	(1.4)	(1.4)	(1.4)	(1.4)	(1.4)
Operational energy efficiency improvement for carbon reduction										
Alternative process development										
Process optimization for carbon reduction										
CCUS and carbon sinking for carbon reduction	0.0	0.0	0.0	0.0	(4.4)	(4.4)	(4.4)	(61.6)	(61.6)	(61.6)
Total carbon reduction	(1.4)	(1.4)	(1.4)	(1.4)	(5.8)	(5.8)	(5.8)	(63.0)	(63.0)	(63.0)
Net zero gap	137.7	137.7	137.7	137.7	133.3	133.3	133.3	76.1	76.1	76.1
Category Two Emissions	213	213	213	213	213	213	213	213	213	213
Energy management for carbon reduction	-	(6.4)	(12.6)	(22.2)	(31.6)	(37.0)	(42.3)	(55.2)	(75.8)	(80.0)
Discharge coefficient reduction										
Renewable energy implementation and procurement	-	(2.2)	(3.6)	(6.5)	(6.5)	(6.5)	(123.4)	(123.4)	(123.4)	(123.4)
Minerals replaced by recycled materials	-	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
Electrical energy replaced by chemical energy										
Pneumatic system effectiveness										
Total carbon reduction		(19)	(26)	(39)	(48)	(54)	(176)	(189)	(209)	(213)
Net zero gap	213.4	194.8	187.2	174.7	165.3	159.9	37.7	24.8	4.2	0.0

Appendix

Sequence	Risk Type	Risk Management Unit	Risk Description	Status on Implementation of Risk Management in 2021
1	Interest Rate Fluctuation Risks	Finance Division	Interest Rate Fluctuation	• Monitor interest rate and market changes, control positions of long-term and short-term loans, and use market tools to fix interest rate costs in a timely manner. • Monitor the Company's financial condition and evaluate financing methods and instruments based on annual budget requirements to reduce financing cost. • Maintain good relationships with banks to obtain the best interest rates on loans and savings.
2	Exchange Rate Volatility Risks	Price Risk Management Div.	Exchange Rate Volatility	• Conduct daily monitoring of foreign exchange exposures as well as profit and loss positions on the previous business day for hedging operation strategy development and portfolio adjustment in response to financial market changes. • Make daily confirmation of foreign exchange exposures as well as profit and loss positions in compliance with relevant company bylaws. • Establish and perfect company bylaws related to foreign exchange management, with the Regulations Governing Forex Risks and ForexTrading , Detailed Rules of Management of Forex Risks and Forex Trading , Detailed Rules of Management of Forex Hedging at Subsidiaries in Mainland China , and Procedures for Management of Forex Risks and Internal Hedging enacted in 2021 to strengthen internal risk management.
3	Climate Change and Environmental Risks	Environment, Health & Safety Div.	Carbon Emission Management	• Implement the ISO 50001management system and develop performance management indicators for major energy-consuming facilities, with implementation of digitalized energy management throughout the company completed in 2019: Completion of the ISO 50001management system implementation at Taiwan plant sites in 2018 and completion of the implementation in Mainland China originally scheduled for the 4th quarter of 2021 (Ongoing implementation at present) • Take inventory of the carbon of major products and calculate carbon emissions per unit of product: Completion of the inventory at Taiwan plant sites in 2020, the inventory implementation in Mainland China scheduled for the 4th quarter of 2021, and completion of the implementation in Mainland China scheduled for the 4th quarter of 2022 • Implement green power generation at Taiwan plant sites: Completion of the implementation of independent solar power generation of 5.3 megawatts for self-use by 2023, with wholesale of another 5.2 megawatts to Taiwan Power Company
		Environment, Health & Safety Div.	Reduce Environmental Pollution and Energy Consumption	• Rationalize water consumption management, provide thorough resolution to water leakages, and enhance recycling and reusing of water resources • Administer three water-saving programs proposed by plant sites and provide counseling and guidance to key projects to target water saving by 20% • Enhance wastewater treatment efficiency and increase reclaimed water reuse: Assistance provided to Jiangyin Walsin Steel Company in August 2021 to keep the COD in treated wastewater under 200 ppm and increase its reclaimed water rate
		President's Office		Improve decision-making and strengthen operational management, including production and process technologies, operational models, and material procurement, in an effort to reduce the impact brought by climate change.

Sequence	Risk Type	Risk Management Unit	Risk Description	Status on Implementation of Risk Management in 2021
4	Occupational Safety Risks	Environment, Health & Safety Div.	Work Environment and Employee Safety	• Continue strengthening risk assessment management, further improve equipment risk assessment and related specialties, engage in dedicated promotion of occupational safety and health, optimize energy blocking in conjunction with equipment safety projects, take inventory of equipment hazards to control such hazards, check and improve equipment hazard assessment, develop specialties for ongoing improvement, and formulate integrated management specifications • Implement a consistent and standardized contractor management system, which is expected to be completed throughout the company in the 4th quarter of 2021: • Completion of the management system implementation in Taiwan, completion of the implementation preparation at overseas plant sites, and horizontal development of the management system at overseas plant sites after completion of the system testing at Changshu Walsin Specialty Steel Company • Optimize contractor management procedures and supervise implementation of the procedures (Completed)
5	Risks Associated with Raw Material Prices and Supply Chains	Price Risk Management Div.	Price Fluctuations of Raw Materials	• Obtain real-time market information thorough various data sources and statistics databanks • Monitor daily raw material positions as well as profit and loss positions for strategy development and adjustment based on market conditions to ensure the raw material positions at individual business groups are all maintained within the prescribed limits of authority • Establish and perfect company bylaws related to raw material management, with the Procedures for Raw Material Position Management and Procedures for Derivative Margin Management enacted in 2021 to further optimize internal risk management
		Commodity Procurement Div.	Supply Cut Off	• Continue supplier development and assessment based on analysis of supplies in major markets to evaluate and grade existing suppliers and ensure the sufficiency of qualified suppliers • Make procurement planning by the Resources Business Group based on individual business groups' approved production budgets and the production and sale volume planned by production-marketing- coordination, properly factor in the quality of overall raw material supplies, delivery stability, and safety stock requirements to flexibly adjust procurement planning and safety stocks, and stipulate a ratio of long-term contracts to spot contracts • Decrease safety stock and raw material shortage risks to gain access to more flexible and timely raw material supplies through negotiation between the Resources Business Group and qualified suppliers on delivery dates and volumes

Sequence	Risk Type	Risk Management Unit	Risk Description	Status on Implementation of Risk Management in 2021
6	Information Security Risks	It Center	Information Systems and Confidential Information Protection	• Continue planning and implementation of information security protection to focus on assessing and resolving host, network, and application risks and vulnerabilities by vulnerability scanning and source code detection • Implement file encryption and planning for secure cloud service to decrease leaks of sensitive information • Check external service system vulnerabilities and conduct penetration testing as well as network risk detection on a regular basis to timely improve and ensure external service system security • Strengthen employee awareness of information security through the Information Technology Month promotion and information security training in conjunction with social engineering drills • Conduct disaster backup and recovery drills on a regular basis, strengthen data security backups to develop incident responsiveness and ensure sustainability capabilities
7	Strategic and Operating Risks	President's Office	Strategic Risks	The operating units regularly report strategic issues to directors in order to reduce strategic risks through participation, counseling and monitoring of the board members.
		Accounting Div.	Operating Goals Achieved	Attainment of policies and goals each year are managed through business performance meetings.
8	Capital Expenditure Risks	Accounting Div.	Purchase and Management of Major Equipment	• Review and amend the Capital Expenditure Management Procedures on a regular basis • Major capital expenditures must be reviewed by the Audit Committee and the Board of Directors
9	Legal Risks	Legal Div.	Penalties for Violations	• Attend risk control and management meetings on a regular basis to provide legal and compliance opinions and advices • Effectively stay on top of various company projects, risks, and/or disputes to develop strategies dealing with them and provide legal risk advices • Provide legal counseling and recommendations related to various operational matters on a daily basis
			Personal Information Leaks	• Provide education and training, and promotion on confidentiality, patents, and intellectual property right management • Continue implementing and perfecting intellectual property right management, and enact and amend company bylaws such as the Confidentiality Management Procedures , Patent Management Procedures , and Academia Industry Cooperation Management Procedures
			Employee Misconduct	• Conduct ethical management promotion, education and training • Continue perfecting company bylaws related to business integrity by amending the Ethical Corporate Management Best Practice Principles and the Procedures for Ethical Management and Guidelines for Conduct with procurement cycle control supervised by the Business Integrity Center, and strengthen assessment of the risks associated with unethical practices
			Transaction Risks	• Continue maintaining and optimizing standard-from contracts • Confirm various daily transactions, contracts, and/or legal documents in compliance with company bylaws as well as relevant laws and regulations, and ensure process control and supervision through legal affairs and seal management systems

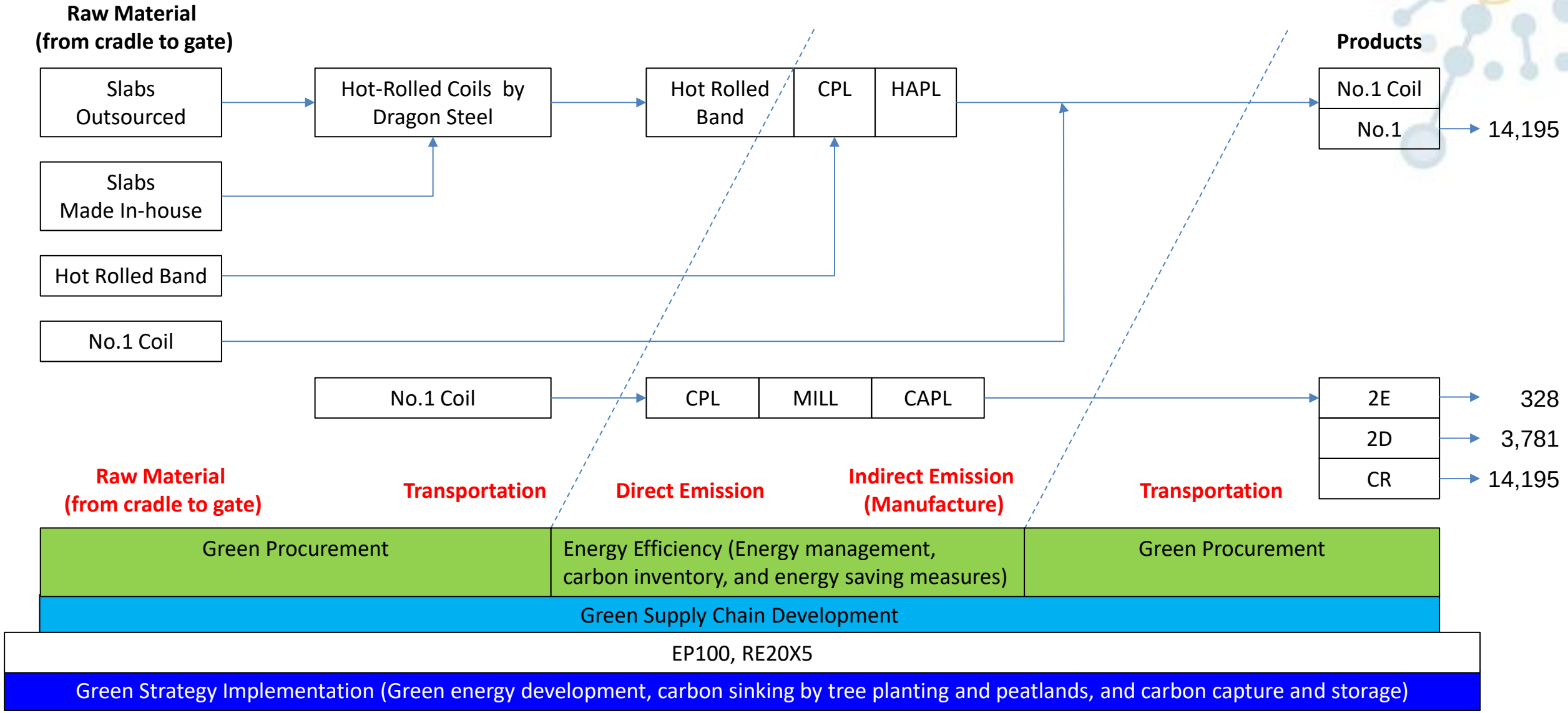
Sequence	Risk Type	Risk Management Unit	Risk Description	Status on Implementation of Risk Management in 2021
10	Technology Risks	Technical Functions of Each Business Group	Prevent the Use of Outdated Technologies and Delays in Product Development Caused by Sudden Market Changes	• Analyze customer inquiry and customer call reports to gain a deep understanding of customer end applications, review equipment and technology capabilities to set up near-term product and technology development objectives and provide high added-value and high quality products, and achieve manufacturing service together with customer service • Stay on top of global environmental trends as well as relevant laws and regulations, conduct industry and competitor analysis on a regular basis with long- and short-term information included to be well informed of customer, industry, and market changes, and accordingly map out product and technology blueprints for medium- and long-term development • Perfect manufacture process control and monitoring, and implement online detection in conjunction with SPC and EDA tools to prevent poor quality and strengthen quality improvement efficiency • Strengthen customer relations and stay on top domestic and overseas port operators' needs to develop energy efficient and lightweight power cables as well as optical fiber compound cables for port operation automation • Engage in product development targeting carbon reduction and green energy industries, e.g., cables for electric vehicle charging plugs, cables in electric vehicles, cables for energy storage, and offshore wind turbine cables • Introduce thermoplastic elastomer and abrasion-resistant cables to drag chain cables for Industry 4.0 machine tools
11	Management Risks	Human Resources Div.	Personnel Changes Handling Employee Employer Relations	• Strengthen the employee-employer communication channel to promote harmonious relations. • Strengthen personnel recruitment channels, employee capability eligibility review, as well as the management, implementation, and monitoring of education and training. • Strengthen the management measures for the collection, handling, and use of personal information, continue to improve the literation of regulations, and uphold the rights of employees/parties involved. • Ensure that the management procedures and relevant administrative operations of human resources comply with relevant laws and regulations.
12	Corporate Image Risks	Corporate Communication Dept.	Negative Image	• Optimize the communication channels with all stakeholders by company website improvement to strengthen communication and interaction with company website users and demonstrate the company's multiple facets and its product image • Pinpoint the operational risks that may affect the company image to establish sound mechanisms for crisis management and responsiveness and arrange simulation of possible risk issues to immediately enable risk response system activation

Greenhouse Gas Emission Inventory at Individual Plant Sites in 2020 (ISO 14064-1:2018)

Category	Greenhouse Gas Emission Categories	Taiwan (Tons of CO_2e/Year)			Mainland China (CO_2e/Year)		Total
		Tons of CO_2e/Year	Percentages of Individual Categories of Greenhouse Gas Emissions	Percentages of Energy Consumption by Manufacture	Tons of CO_2e/Year	Percentages of Energy Consumption by Manufacture	
Manufacture	Category 1 Direct Greenhouse Gas Emissions	139,053	5.0%	39.5%	38,603	17.7%	177,656
	Category 2 Indirect Greenhouse Gas Emissions from Imported Energy	213,415	7.7%	60.5%	180,010	82.3%	393,426
Total Direct Emission Responsibilities (Manufacture)		352,468	12.8%	100.0%	218,613	100%	571,081
Transportation	Category 3 Transportation Carbon Emissions	127,520	4.6%	-	*	*	*
Raw Material	Category 4 Emissions from the Use of Products and Services Sold by Walsin Lihwa	2,280,822	82.6%	-	*	*	*
Total	Carbon Dioxide Equivalent (CO_2e) of Total Greenhouse Gas Emissions	2,760,810			*		*

- Category 1 and 2 are manufacture carbon emissions subject to carbon fees and direct emission responsibility as required by the CBAM. Efficient utilization of energies and resources, electrification of combustion, and electrification of transportation are the future directions in addition to energy management system development and green energy implementation.
- Net zero manufacture is difficult and there is a lot of work to do to improve production measures.
- Category 3 and 4 are raw material and transportation carbon emissions, which amount to higher than 80%. How to decrease supply chain carbon emissions, in particular, raw material carbon emissions, is a big issue, and there will be stricter corporate social responsibility requirements in this regard.

Greenhouse Gas Emission Inventory > Energy Saving Measure > Green Energy Planning > Net Zero Carbon Emission



Scope 1 and 2 Requirements of the European Union's Carbon Border Adjustment Mechanism (CBAM)

CBAM: The European Commission adopted a proposal for a Carbon Border Adjustment Mechanism (CBAM) on July 14, 2021. After a simplified CBAM takes effect on January 1, 2023, there will be a 3-year transitional period and carbon declarations before the mechanism becomes fully operational on January 1, 2026.

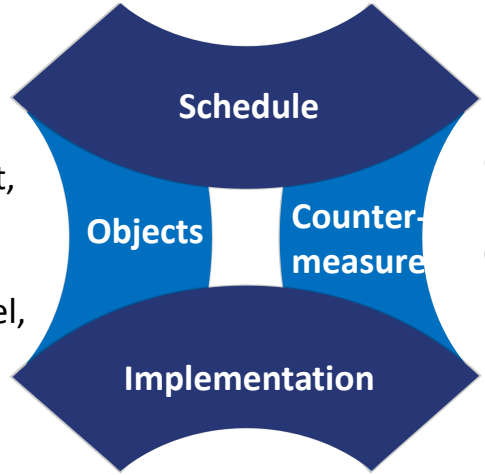
Possible Important Considerations for CBAM Implementation

- Assurance that the carbon contents in imported products are accurately reflected by their prices (Category 1 and 2)
- An alternative to the European Union Emissions Trading System to resolve carbon leakage risks
- Compliance with the most favored nation and national treatment clauses of the WTO and, in particular, the GATT
- A focus on carbon-intensive industries

Content

2023 – 2026: Transitional period
2026: Fully operational

- Iron and steel, aluminum, chemical fertilizers, cement, and power generation
- The industries in Taiwan that may be impacted: Steel, aluminum, and chemical fertilizers



Carbon pricing implemented by the countries of origin to lower their CBAM costs

Taxation on imported products based on their carbon contents, i.e., carbon emissions

Korea, Japan, and the US will also have their own advocacies similar to the CBAM.
Carbon pricing and the CBAM, i.e., carbon border taxation, are the economic tools to help achieve net zero carbon emission.

Data sources: https://www.euractiv.com/wp-content/uploads/sites/2/2021/06/CBAM-Regulation-Draft.pdf

Relevant Laws and Regulations in Taiwan

Relevant Laws and Regulations	Requirements	Competent Authority
Renewable Energy Development Act	The chartered capacity of 5,000 kilowatts or above shall stall renewable energy generation and storage facilities to provide at least **10%** of the chartered capacity, or **monetary substation of approx. NT$5 per kilowatts shall be paid** to the competent authority for the purpose of the development of renewable energy.	Bureau of Energy
Article 23 of the Self Government Ordinance for A Low Carbon City	The chartered capacity of 800 kilowatts or above shall stall install **green power generation to provide at least 10%** of the chartered capacity.	Tainan City Government and Taoyuan City Government
Greenhouse Gas Reduction and Management Act	1. Industrial sectors shall **decrease annual carbon emissions by 2%** in 2020. 2. A total emission cap will be implemented in 2025 to impose penalties on violations. 3. Designated chapter on carbon fees and climate adaptation will be enacted but has yet to be scheduled.	Environmental Protection Administration
Regulations on Setting Energy Conservation Objectives and Execution Plans for Energy Users	1. An average annual power saving rate of **higher than 1%** from 2015 to 2019 2. An energy user power saving rate of **higher than 1%** from 2020 to 2024	Bureau of Energy
Discussion of Establishment of a Steel Industry Greenhouse Gas Reduction and Management Act Implementation Team and Total Mass Based Control	Science Based Target initiatives (SBTi), corporate social responsibility disclosure and commitment to carbon reduction, green energy implementation, ISO50001 Energy Management System, and climate change management mechanisms required for the steel industry	Industrial Development Bureau

The Bureau of Energy has announced penalties for any annual power saving rate of lower than 1%, monetary substitution required for renewable energy not reaching 10% of the chartered capacity by 2025, the Climate Change Adaptation Act (management of carbon fees), SBTi, Energy Productivity 100, and Renewable Energy 100 among other requirements.

Greenhouse Gas Inventory > Energy Saving > Unit Carbon Emission > Carbon Emission per Unit of Product

Energy Management System and Advanced Management of Greenhouse Gas Inventory

- Ongoing power saving measures to reduce annual carbon emissions by at least 1.5%
- Unit carbon emissions converted into internal carbon pricing as an internal management indicator and a benchmark for assessment of capital expenditures
- Unit carbon emissions and carbon emissions per unit of product as a basis of taxation on goods produced outside the EU as required by the CBAM
- Science Based Target initiatives and Energy Productivity 100 for energy utilization efficiency enhancement
- Planning for green power implementation

Green Strategy for Net Zero Carbon Emission by 2025 by Carbon Emission Management

- Increase of Green Energies Year by Year:
  2023 Independent solar power generation of 5.3 megawatts for self-use
  2025 Independent solar power generation of 5 – 10 megawatts for self-use (10 – 15 megawatts of green power in accumulation)
  2026 – 2028 Green power procurement to total 360,000 MWh per year including 50 megawatts of wind power by 2026 and 50 megawatts of wind power by 2028
  2028 Independent green power generation of 15 megawatts for self-use together with 100 megawatts of wind power totaling 372,875 MWh to meet all the power demand of Walsin Lihwa's operations throughout Taiwan (100% green power for Category 2: Indirect greenhouse gas emissions from imported energy)
  2030 - 2050 Achievement of net zero carbon emission by energy saving, carbon sinking, and carbon capture and storage
- Greenhouse gas inventory as well as energy management and saving measures: Carbon management indicators such as capital expenditures and cost control, carbon emissions per unit of product, internal carbon pricing, management of carbon indicators, and relevant assessment mechanisms
- Energy management: Key energy consumption indicators, key equipment management, energy saving program management such as implementation of the Task Force on Climate-related Financial Disclosures (TCFD) and SBTi, ongoing energy management and power saving measures, and introduction of new technologies to strengthen energy and resource utilization efficiency
- Application of carbon capture and storage: Furnace slag recovery for carbon fixation, flue carbon dioxide captured and converted into methane, and application of other carbon capture and storage technologies

For the long term, implementation of the study of net zero carbon emission is recommended.