Qisda

2023 SUSTAINABLE IMPACT VALUATION REPORT

Qisda Corporation

Contents

Executive Summary

“Together, Make the World Better” is the vision of Qisda. As a comprehensive electronic design manufacturing services company spanning multiple fields, we aim to practice corporate sustainability through collaboration and mutual support, while balancing environmental and ecological considerations to foster societal well-being and create long-term positive value for stakeholders. To manage the risks and opportunities that ESG (Environmental, Social, and Governance) factors present to operations, Qisda has implemented the "Impact Measurement and Valuation" methodology since 2023. This approach evaluates the impact of the value chain on human well-being from the outside in. From the upstream supply chain, through production operations, to the downstream product sales phase, this analysis encompasses the intersections of economic, environmental, and social issues. Based on the Profit and Loss (P&L) management concept, it includes the externalities of costs (negative) or benefits (positive)[1] , translating them into a consistent monetary language. This establishes a sustainable impact management framework based on the Triple Bottom Line (TBL), measuring the substantial contributions the value chain makes to society.

Qisda measures the economic value created for stakeholders during the production and operational process through the Gross Value Added (GVA) method, which includes net business profit, employee compensation, cash dividends, research and development investments, taxes, interest, leasing, depreciation, and amortization. Following frameworks such as the Natural Capital Protocol, Social & Human Capital Protocol, ISO 14008:2019 standards for monetary valuation of environmental impacts and related environmental aspects, Value Balancing Alliance (VBA), and Impact-Weighted Accounts (IWA), Qisda evaluates the environmental and social externalities derived from operational activities through a causality-driven impact pathway method. In the supply chain, Qisda uses an input-output model to analyze the procurement demands and product sales that drive the overall industry chain’s supply and demand effects, boosting output value, as well as identify employment opportunities and wage income for the supply chain. Facing accompanying environmental issues, Qisda conducts industry hotspot analysis through Environmentally Extended Input Output Analysis (EEIO) and integrates this into procurement strategies for consideration. In terms of products and services, Qisda continues to maintain a global leadership position in areas such as LCD displays and projectors through innovative and diverse product design capabilities and deep research and development expertise. This brings success to customers, and indirectly boosts the value of the industry chain. Additionally, from the perspective of Life Cycle Assessment (LCA), Qisda analyzes the environmental impacts from the use to disposal stages of products, as well as the environmental benefits brought by energy-saving and environmentally friendly product designs.

1 *Externalities refer to the relative value of positive and negative impacts on society or the environment caused by operational activities that are not reflected in free market prices.*

In 2023, Qisda generated NT$86 billion in revenue during the operational phase, with total payments including taxes, dividends, employee compensation, research and development investment, interest, leasing, depreciation, and amortization amounting to NT$15.9 billion. This positively impacted stakeholders and promoted socioeconomic growth. While deepening our core businesses, the environmental footprint resulting from resource consumption and pollutant generation incurred an environmental externality cost of NT$110 million. However, through various energy-saving measures, the deployment of renewable energy, and the reuse of water resources, an environmental benefit of NT$24.77 million was created. On the social front, comprehensive training programs have enhanced colleagues' skills and employability, creating NT$200 million in future career earnings for them. Workplace accidents incurred a social cost of NT$380,000; health risks arising from workload led to NT$3.77 million in social costs, but diverse health education activities and long-term monitoring generated a positive impact of NT$550,000 on colleagues' health. Additionally, various local care programs and employee-initiated activities created NT$160 million in social value. In the supply chain, Qisda's procurement needs drove the creation of NT$116.9 billion in output value across the supply chain, generating over 10,000 jobs and NT$3.8 billion in salary income. However, the environmental footprint and resource consumption from the supply of raw materials and services incurred an environmental externality cost of NT$1.7 billion. In terms of products and services, Qisda's display products generated NT$169.6 billion in output value for client industries. Although energy consumption during the product usage phase incurred an environmental externality cost of NT$450 million, innovative energy-saving product designs resulted in environmental benefits of NT$55.23 million, assisting clients in achieving their targets and growing together.

On the path to sustainable development, Qisda continues to innovate and break new ground, and is committed to reducing the negative impacts derived from operations and creating positive value for stakeholders. Through impact-oriented thinking, this will help us consider broader and more profound effects in our decision-making, further uncovering the risks and opportunities that sustainability issues management might bring to the company's long-term development.

Impact Causes	Sustainability Issues Management	Activity Output	Impact Items	Impact Attributes	Monetary Value (KNTD) 2022	Monetary Value (KNTD) 2023	Impact Subjects
Supply chain	Sustainable supply chain management	Procurement demands drive supply and demand in the industry	Social externality - Boosting the output value in the supply chain	Positive (+)	162,819,845	116,900,548	Society
		Procurement demands create employment opportunities in the supply chain	Social externality - Employment income of employees in the supply chain	Positive (+)	5,211,961	3,767,325	External employees
		Greenhouse Gas Emissions from the Supply Chain	Environmental Externality - Supply Chain Greenhouse Gas Emissions	Negative (-)	1,328,746	990,118	Environment
		Air Pollutant Emissions from the Supply Chain	Environmental Externality - Supply Chain Air Pollutant Emissions	Negative (-)	887,393	646,461	Environment
		Wastewater Discharge from the Supply Chain	Environmental Externality - Supply Chain Wastewater Discharge	Negative (-)	6,790	5,163	Environment
		Waste Generation from the Supply Chain	Environmental Externality - Supply Chain Waste Disposal	Negative (-)	15,949	11,830	Environment
Business Operation	Operational and financial performance	Operating Income	Stakeholder Gross Value Added (GVA)	Positive (+)	8,251,930	2,961,260	Shareholders/ Investors
		Cash Dividends		Positive (+)	3,934,787	8,441,851	Shareholders/ Investors
		Taxes Paid		Positive (+)	410,099	231,145	Society
		Interest and Lease		Positive (+)	540,172	883,260	Suppliers
		Depreciation and Amortization		Positive (+)	418,963	413,976	Suppliers
	Talent Policy	Renumeration and Benefits		Positive (+)	3,962,682	3,370,298	Employees
	R&D and innovation of green products	New Technology Research and Development		Positive (+)	257,286	2,580,555	Customers
	Climate Strategy and Energy Management	Greenhouse Gas Emissions from Energy Use	Environmental Externality - Greenhouse Gas Emissions from Operations	Negative (-)	118,620	106,894	Environment
		Use of Renewable Energy to Avoid Greenhouse Gas Emissions		Positive (+)	9,384	23,350	Environment
		Advancement of Energy Efficiency Measures to Avoid Greenhouse Gas Emissions		Positive (+)	1,511	1,399	Environment
	Water resource management	Water Scarcity due to Use of Process Water	Environmental Externality - Operational Water Consumption	Negative (-)	1,189	1,069	Environment
		Use of Recycled Water to Avoid Water Scarcity		Positive (+)	23	19	Environment
		Water Pollution due to Process Wastewater Discharge	Environmental Externality - Operational Wastewater Discharge	Negative (-)	942	842	Environment
	Air Pollution Control	Air Pollution from Process Air Emissions	Environmental Externality - Operational Air Pollution Emissions	Negative (-)	2,936	3,365	Environment
	Waste management	Environmental Impact due to the Waste Disposal Process	Environmental Externality - Operational Waste Disposal	Negative (-)	3,181	2,138	Environment
	Occupational Safety and Health	Employees Occupational Accidents	Social Externality - Employees Occupational Accidents	Negative (-)	257	381	Employees, Society
		Contractors' Occupational Accidents	Social Externality - Contractors' Occupational Accidents	Negative (-)	0	0	External Employees, Society
		Number of People at Risk of Cardiovascular Disease	Social Externality - Employee Health Risks	Negative (-)	3,263	3,770	Employees, Society
		Number of People with Health Improved Under Health Management	Social Externality - Employee Health Management	Positive (+)	564	545	Employees, Society
	Employee Training and Development	Skill Acquisition and Revenue Growth	Social Externality - Future Income of Employees	Positive (+)	411,566	200,984	Employees, Society
	Corporate citizen and charity	Social Engagement, Input of Resources, and Expenses	Social Externality - Social Input Value	Positive (+)	56,814	157,603	Society
Products and Services	Customer relationship management	Product Sales Drive Supply and Demand of Industry in the Downstream	Social Externality - Boosting Output Value in the Industry Chain	Positive (+)	227,357,098	169,578,546	Society
	R&D and innovation of green products	Product Energy-Saving Design to Avoid Greenhouse Gas Emissions	Environmental Externality - Energy Saving Benefits of Products	Positive (+)	47,850	55,229	Environment
		Greenhouse Gas Emissions During Product Use	Environmental Externality - Product Use and Disposal	Negative (-)	625,037	445,356	Environment

Analysis Methods

Implementation of Sustainable Impact Assessment involves four main steps: defining boundaries and scope, mapping impact pathways, verifying data sources and quality, and establishing a valuation method. Each step is interconnected, and decisions made during any step will affect the integrity and accuracy of the final analysis results.

Boundaries and Scope

Qisda's value chain activities include the supply chain (upstream), production and operations, and products and services (downstream), which have both positive and negative impacts on stakeholders. Some impacts are directly generated by the company's own operational processes, while others are indirectly produced along the value chain.

- Upstream: Refers to all economic activities undertaken by raw material suppliers or service providers to meet Qisda's procurement needs, including modules and electronic materials, equipment, software, engineering, electronic components, consumables, general affairs, and transportation services.
- Production and operations: Refers to all activities at Qisda's global production and operational sites, including product design, manufacturing, and assembly. The boundaries of this report are consistent with the company's corporate sustainability report. If the assessment boundaries differ from the sustainability report, they are explained in the respective sections of the analysis results.
- Downstream: Refers to the customers to whom Qisda provides products and services.

Mapping Impact Pathways

To clarify the direct and indirect, positive and negative, long-term and short-term, global and regional impacts of various activities within the value chain on stakeholders, Qisda utilizes the impact pathway method. This approach considers the inputs and outputs of activities, changes and impacts on stakeholders' well-being, and the social value or costs derived, while also taking into account the connectivity of ESG issues. It identifies the complex causal relationships with systematic logical thinking. For more details, please refer to the explanations in the respective sections of the Analysis Results.

Value Chain	Sustainability Issues Management	Inputs and Outputs of the Operational Process	Causing or facilitating changes in well-being	Impacts generated	Impact Subjects
Supply chain	Sustainable supply chain management	Payments to suppliers for procurement	Driving the supply and demand relationships in the industry chain to boost output value	Socio-economic development	Society
			Creating employment opportunities and salary income in the supply chain	Employment opportunities and skills	External employees
			Changes in greenhouse gas concentration causing global warming	Social cost of carbon	Environment
			Changes in the concentration of air pollutants in the atmosphere	Human health, ecosystems	Environment
			Changes in the concentration of pollutants in water bodies	Human health, ecosystems	Environment
			Air pollution emissions from waste incineration	Human health, ecosystems	Environment
			Greenhouse gas emissions from waste incineration and landfill	Social cost of carbon	Environment
Business Operation	Operational and financial performance	Net operating income and cash dividends	Assist customers in creating successful products and bring returns to investors	Quality of life and purchasing power	Shareholders/ Investors
		Taxes Paid	Support the government to expand infrastructure and social welfare	Socio-economic development	Society
		Interest and Lease	Enhance economic growth momentum	Quality of life and purchasing power	Suppliers
		Depreciation and Amortization	Driving Industrial Technology Development	Industrial Technological Capability	Suppliers
	Talent Policy	Renumeration and Benefits	Salaries above the living wage enhance well-being	Employment opportunities and purchasing power	Internal Employees
	R&D and innovation of green products	New Technology Research and Development	Contributes to the development and application of industrial technology	Quality of life, industrial technological capability	Customers
	Climate Strategy and Energy Management	Direct Greenhouse Gas Emissions from Processes	Changes in greenhouse gas concentrations causing global warming	Social cost of carbon	Environment
		Indirect Greenhouse Gas Emissions from Energy	Changes in greenhouse gas concentrations causing global warming	Social cost of carbon	
		Use of renewable energy	Avoiding greenhouse gas emissions that contribute to global warming	Social cost of carbon	Environment
		Energy Conservation Measures in Processes	Avoiding greenhouse gas emissions that contribute to global warming	Social cost of carbon	Environment
	Water resource management	Water Consumption	Changes in water resource reserves	Human health, natural resource reserves	Environment
		Process Wastewater Discharge	Changes in the concentration of pollutants in water bodies	Human health, ecosystems	Environment
	Air Pollution Control	Air Pollutant Emissions from Manufacturing Processes	Changes in the concentration of air pollutants in the atmosphere	Human health, ecosystems	Environment
		Air pollution from Gasoline and Diesel use	Changes in the concentration of air pollutants in the atmosphere	Human health, ecosystems	Environment
	Waste management	Process Waste	Incineration of waste generates air pollution and green-house gases	Social cost of carbon, human health, ecosystems	Environment
	Occupational health and safety	Occupational Accidents and Occupational Diseases	Impact on workers' physical, mental, and spiritual well-being and medical resource expenditures	Quality of life, consumption of social resources	Internal Employees, Society
		Number of people at health risk	Health risks arising from heavy workload	Work-life balance	Internal Employees, Society
		Number of People with Health ImprovedUnder Health Management	Improving colleague lifestyles through health education	Work-life balance	Internal Employees, Society
	Employee Training and Development	Training Hours and Funds	Acquisition of professional skills through training and employability enhancement	Professional knowledge and skills	Internal Employees, Society
	Corporate citizen and charity	Social investment	Improving the quality of life in local communities	Local community relationships	Society
Products and Services	Customer relationship management	Product Sales Revenue	Driving the supply and demand relationships in the industry chain to boost output value	Socio-economic development	Society
	R&D and innovation of green products	Product Energy-Saving Design	Energy-saving in products to avoid greenhouse gas emissions	Social cost of carbon	Environment
		Number of Products Sold	Greenhouse gas emissions from the sale to disposal process of products	Social cost of carbon	Environment

▪ Verification of Data Sources

Sources of activity data are divided into primary data (raw data originating from the results of the inventory conducted) and secondary data (derived from related literature, databases, or estimations). When conducting a sustainable impact assessment, priority should be given to the use of higher quality primary data for calculations. However, when primary data is unable to be obtained, secondary data should be used for calculations. For example, the supply and demand relationships between industries in the supply chain and the pollution emissions per unit of output can only be estimated using national survey reports and industry average coefficients.

		Upstream Supply Chain	Production Operations	Downstream Product Sales
Economic Aspect	Activity Data	Purchase Amount/Industry Supply and Demand	Internal Financial Performance Indicators	Product Sales Revenue/Industry Supply and Demand
	Data Quality	**Primary Data/Secondary Data**	**Primary Data**	**Primary Data/Secondary Data**
	Impact Category	Driving Supply Chain Output Value	Directly Created Economic Value	Driving Industry Chain Output Value
Environmental Aspect	Activity Data	Industry Average Coefficient Database	Energy Resources, Pollutant Emissions	Product Environmental Benefits, Greenhouse Gas Emissions
	Data Quality	**Secondary Data**	**Primary Data**	**Primary Data/Secondary Data**
	Impact Category	Human Health, Ecosystem Loss, Social Cost of Carbon		
Social Aspect	Activity Data	Industry Average Coefficient Database	Employee Occupational Injuries, Health Examinations, Remuneration, etc.	Methodology Development in Progress
	Data Quality	**Secondary Data**	**Primary Data**	
	Impact Category	Creating Employment Opportunities and Remuneration	Changes in Individual or Social Welfare	

▪ Establishing a Valuation Method

Qisda's Sustainable Impact Management Framework covers three major value chain stages (Supply Chain/Production Operations/Products and Services), three dimensions of sustainability management (Economic/Environmental/Social), and 14 categories of impact indicators. The methodology primarily references practices of leading domestic and international companies and related research reports.

Boundary	Impact Indicators	Calculation Methods
Supply chain	Social Externality: Boosting Supply Chain Output Value	Using the Input-Output Analysis (IOA) model to assess the economic benefits derived from procurement activities that drive supply and demand in the industry chain; evaluating the environmental external costs due to greenhouse gas and air pollution emissions caused by pollution per unit of output in each industry; and the positive impacts such as employment opportunities and salary income brought to the supply chain.
	Social Externality: Supply Chain Employee Salary Income	
	Environmental Externality: Supply Chain Environmental Footprint	
Production and operations	Gross Value Added (GVA)	Using the Gross Value Added (GVA) method to examine the flow of value created for stakeholders during the operational process, including net business profit (shareholders/investors), compensation and benefits (employees), taxes paid (government), R&D investment (customers/end-users), interest and lease (suppliers), and depreciation and amortization (suppliers).
	Environmental Externality: Greenhouse Gas Emissions	Using the Environmental Profit and Loss (EP&L) approach to assess the external environmental costs derived from energy resource consumption and pollutant emissions during company operations, as well as actions taken to mitigate negative impacts on society.
	Environmental Externality: Water Resource Consumption	
	Environmental Externality: Wastewater Discharge	
	Environmental Externality: Waste Disposal	
	Social Externality: Future Earnings of Employees	Using the VBA (2021) methodology to evaluate the professional skills and knowledge acquired by employees through company training programs, which not only enhance productivity but also bring better employability and salary income for their future career development.
	Social Externality: Occupational Accident Events	Referencing a research report by the UK's Health and Safety Executive (HSE, 2017), calculations include factors such as productivity losses due to work-related injuries, workers' compensation, and willingness to pay to avoid occupational accidents.
	Social Externality: Health Risks and Management	Through regular health checks to detect high blood pressure, high cholesterol, high blood sugar, and obesity at an earlier stage, various health promotion programs are implemented to reduce or avoid the risk of cardiovascular diseases and related medical costs.
	Social Externality: Social Investment Value	Referencing the Business for Societal Impact (B4SI) community investment assessment framework, the investments in charitable activities including cash, materials, time, and management costs are calculated, assessing and distributing the quantified benefits of various projects.
Products and Services	Social Externality: Boosting Industry Chain Value	Focusing on cloud servers and integrated server cabinet solutions, considering the relationship between sales amount and the supply and demand of the brand client industries, assessing the indirect economic value created by product sales.
	Environmental Externality: Product Environmental Footprint and Benefits	Through the perspective of Life Cycle Assessment (LCA), analyzing the environmental impacts from the use to disposal stages of products, as well as the environmental benefits brought by energy-saving and environmentally friendly product designs.

Given that the monetary value conversion coefficients come from various studies, Qisda follows the ISO 14008:2019 framework for monetary valuation of environmental impacts and related environmental aspects, defining adjustments for geographical and temporal differences using 2021 as a baseline year.

1 Geographical Background Adjustment：

According to the following formula, the Gross National Income (GNI) adjusted by Purchasing Power Parity (PPP) for each region is used for equity-weighted calculations (OECD, 2012).

$$Ei = (Yi / Yref)^{\epsilon}$$

of which

Ei is the income adjustment weighting

Yi is the adjusted Gross National Income (GNI) of the region of the value conversion using the region's Purchasing Power Parity (PPP)

Yref is the adjusted GNI of the region of the original study using the region's PPP

2 ϵIncome elasticity factor refers to the relationship between Willingness to Pay (WTP) and income. The value is between 0 and 1. 1 indicates a pos itive correlation between WTP and income, while 0 shows that the WTP is not correlated with income. The report adopts the recommended value of 0.6 by PwC UK (2015).Temporal Background Adjustment: Considering factors like inflation and exchange rates, the value coefficients from different time periods are adjusted to the currency value of the base year.

Analysis Results

▪ Upstream Supply Chain

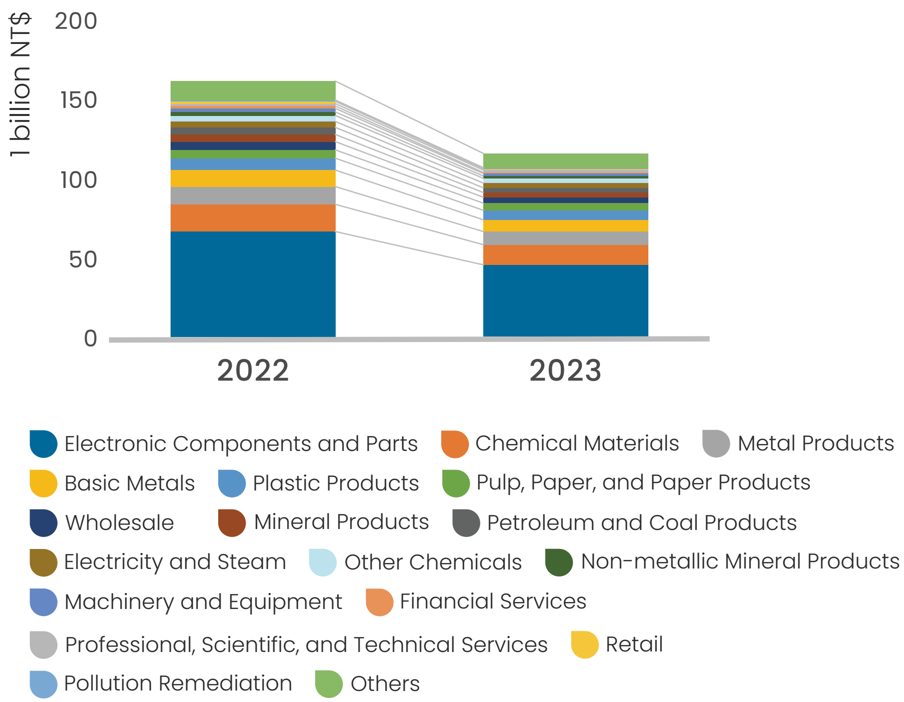
Procurement Boosting Supply Chain Output

Due to the complex interdependencies between industries in economic activities, the Input-Output model developed by Laureate of the Nobel Memorial Prize in Economic Sciences, Wassily Leontief, during the 1930s to 1940s allows the allocation of production input factors of various industries to the final demand for goods, with company activities leading to changes in this demand (VBA, 2021).This model is typically compiled by governments or scientific research institutions based on real financial data and presented in the form of industry linkage tables. In this report, the Input-Output model is used to identify the impact of procurement expenditure on the supply and demand structure in the industry chain, including output, employment, and wages. This is further extended to calculate emissions of various pollutants.

Analysis Results

In 2023, Qisda indirectly created NT$116.9 billion in supply chain output value due to procurement demands (positive), with the "Electronic Components Industry" and "Chemical Materials Industry" being the largest contributors, accounting for 40% and 11%, respectively. Recent trends indicate a 28.2% decrease in the influence of procurement demands in boosting supply chain output, primarily due to clear signs of an economic downturn, which has led to a decrease in overall procurement demands compared to the previous year.

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Purchase Amount
Calculation Explanation	In this report, the supply and demand relationships between industries are calculated based on the Directorate General of Budget, Accounting and Statistics' 2016 industry linkage table.
References	Directorate-General of Budget, Accounting and Statistics (2020)



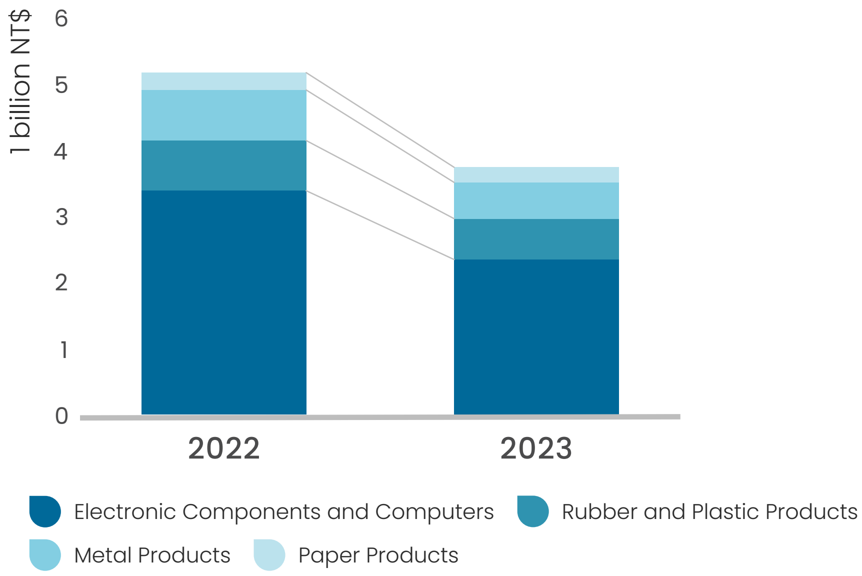
Procurement Creates salary income for supply chain employees

In the Input-Output Analysis Model, all inputs from the production and service processes of suppliers (direct) as well as their upstream stages (indirect) are included in the calculations and allocated based on the changes in final demand caused by company activities (VBA, 2021). This model allows for the analysis of the total industry chain's direct and indirect inputs needed to meet procurement demands and the resulting changes in final demand, such as recruitment of employees and salary expenditures.

Analysis Results

In 2023, due to Qisda's procurement demands, 10,000 employment opportunities were created in the supply chain, bringing NT$3.8 billion in salary income to workers as a social externality benefit (positive), with the "Electronic Components and Computer Manufacturing Industry" contributing the most at 62.8%.

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Purchase Amount
Calculation Explanation	This report references the Exiobase 2 Input-Output database[2] and uses Taiwanese industry coefficients for calculations.
References	EXIOBASE 2 Database



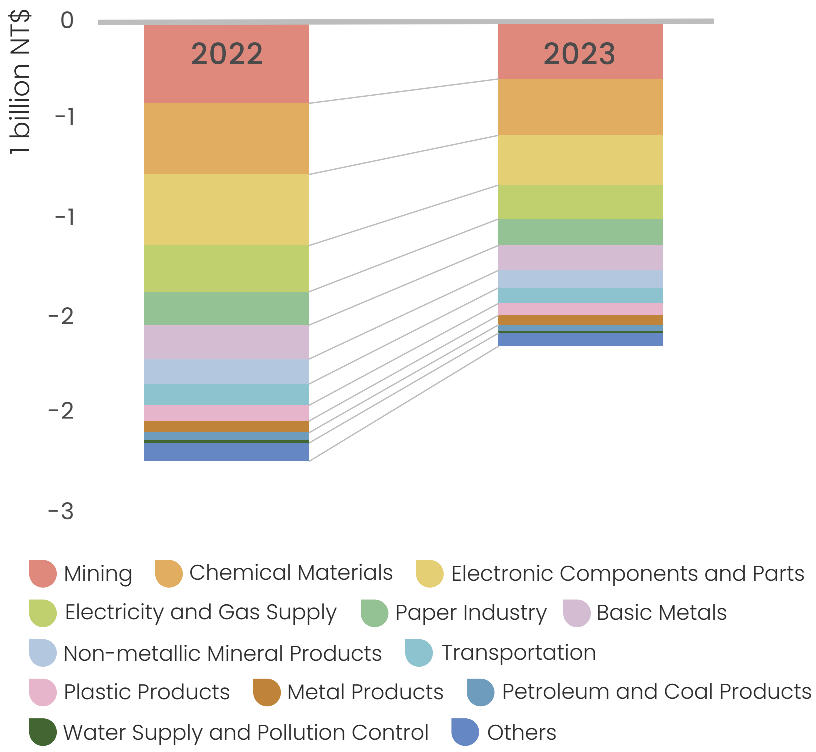
2 The EXIOBASE database is a global trans-regional Supply-Use and Input-Output database developed jointly by institutions including the Norwegian University of Science and Technology (NTNU), the Netherlands Organization for Applied Scientific Research (TNO), the Sustainable Europe Research Institute (SERI), the Institute of Environmental Sciences at Leiden University (CML), the Institute for Ecological Economics at Vienna University of Economics and Business (WU), and the 2.-0 LCA consultancy, among other research organizations. EXIOBASE 2 is based on the year 2007 and covers economic, environmental, and social data across five continents, 43 countries/regions, and 163 industries.

Environmental Footprint Derived from the Supply Chain

The Input-Output Analysis Model is widely used for economic impact analysis (EIA) and Environmentally Extended Input Output Analysis (EEIO) (VBA, 2021). Traditional input-output tables are used to clarify the exchanges between industries (Miller & Blair, 2009); whereas EEIO integrates environmental impact information from various industries, providing a simple and robust method to assess the links between economic consumption activities and environmental impacts (Kitzes, 2013).

Analysis Results

In 2023, due to procurement demands, Qisda indirectly caused the emission of 620,000 tons of greenhouse gases, 1,775 tons of air pollutants, 574 tons of wastewater pollutants, and 6,790 tons of waste in the supply chain. The derived environmental externality is estimated at approximately NT$1.7 billion (negative). The pollutants and waste mainly stem from electronic components and upstream mining of ore materials, accounting for 34%; followed by the environmental footprint from chemical materials production and power gas supply processes, accounting for 16% and 10% respectively.



Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Purchase Amount
Calculation Explanation	To identify the relationship between procurement amounts in various industries and environmental impacts, this report follows the Environmentally Extended Input Output (EEIO) methodology. It analyzes publicly available statistics from the Directorate-General of Budget, Accounting and Statistics, and the Energy Bureau, calculating pollutant emissions per unit of output for each industry. This includes greenhouse gases, air pollution (PM2.5, NOx, SOx, NMHC, Pb), wastewater (COD), and waste (incineration). The resulting social costs are assessed using value coefficients.
References	Sources: Directorate-General of Budget, Accounting and Statistics (2021), Energy Bureau (2021), US EPA (2016), OECD (2012), PwC UK (2015), CE Delft (2018)

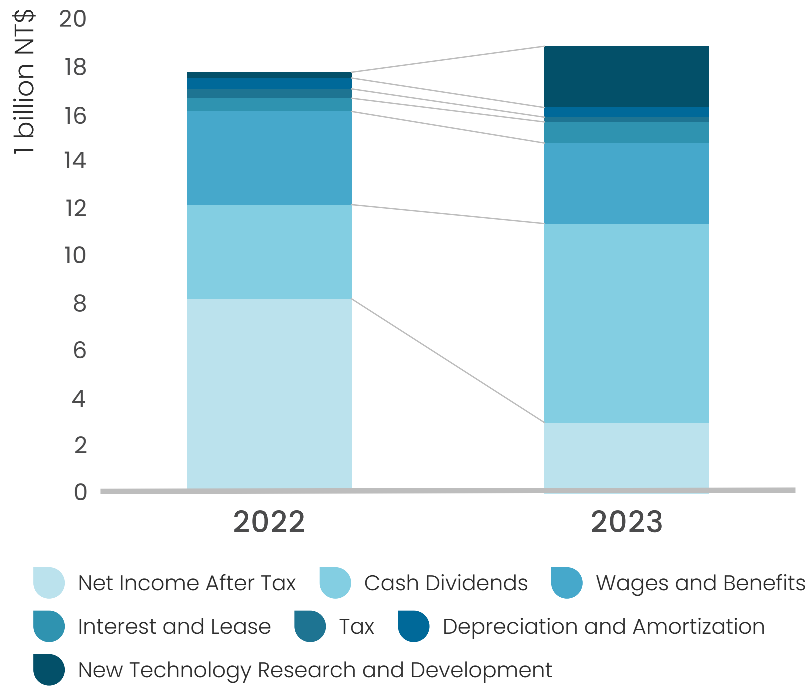
▪ Production Operations

Added Value Income

The Gross Value Added (GVA) method evaluates the difference between intermediate inputs and final outputs in the operational process of a company, while simultaneously considering the original inputs and public expenditures. These economic activities bring benefits to various stakeholders, including net business profit, employment costs, and taxes. Therefore, GVA can serve as a basis for understanding the contributions made by the company to the welfare of its stakeholders (VBA, 2021). This report reconsiders the flow of value created for stakeholders during the operational process through the GVA method, including net business profit (shareholders/investors), compensation and benefits (employees), taxes (government), and depreciation and amortization (suppliers).

Analysis Results

In 2023, Qisda generated NT$86 billion in revenue, with an allocation of NT$410 million for depreciation and amortization, NT$230 million in taxes paid, NT$2.58 billion invested in technological research and development, NT$3.37 billion in employee salaries, and NT$880 million in interest and rent. This not only supported clients in the creation of successful products, driving the development of industrial technology, and enhancing both employee well-being and purchasing power, but also supported government efforts to expand infrastructure and social welfare (positive). Additionally, Qisda created NT$2.96 billion in net business profit and distributed NT$8.44 billion in cash dividends, generating quality returns for investors (positive).



Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Data from Qisda's financial report
Calculation Explanation	The Gross Value Added (GVA) method is used to assess the difference between intermediate inputs and final outputs during Qisda's operational processes, while considering the economic activities of original inputs and public expenditures that bring benefits to various stakeholders.
References	VBA (2021)

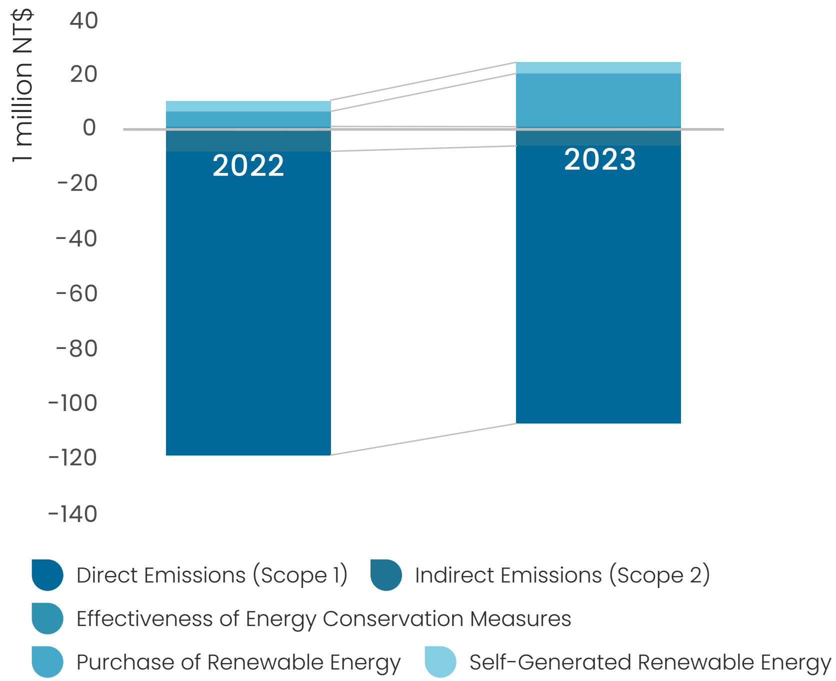
Greenhouse Gas Emissions, Energy Conservation, and Renewable Energy

Greenhouse gases (GHG) are gases in the atmosphere that absorb or emit infrared radiation, trapping heat on the earth's surface and in the troposphere, creating the greenhouse effect. The United Nations Convention on Climate Change divides greenhouse gases into seven categories, including: carbon dioxide (CO_2), m ethane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs)), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). In this report, the environmental externalities caused by operational production are calculated based on the social cost of carbon (SCC) derived from greenhouse gas emissions.

Analysis Results

In 2023, 66,546 metric tonnes of CO_2e were released from Qisda's production and operational processes, resulting in an external environmental cost of about NTD 100 million (negative), 94% of which came from indirect emissions from energy use (Scope 2)[3]. 6% come from direct emissions (Scope 1) from production and operation processes. To mitigate the external costs derived from energy consumption, Qisda actively plans the use of renewable energy at all global operational sites and promotes various energy-saving projects. In 2023, these initiatives avoided 15,427 metric tons of CO_2e emissions, bringing about NT$24.75 million in environmental external benefits (positive).

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Greenhouse Gas Emissions, Self-Generated and Purchased Renewable Energy, Effectiveness of Energy Conservation Measures
Calculation Explanation	Through the Environmental Profit and Loss (EP&L) perspective, the social cost of carbon is used as the external cost coefficient per unit of greenhouse gas emissions. This represents the societal cost paid for long-term damage to global physical and economic systems caused by climate change, including economic losses from physical disasters, harm to human health, or the economic costs of energy transformation to prevent warming.
References	US EPA (2016)



3 *Scope 2 calculations are based on regional benchmarking methods.*

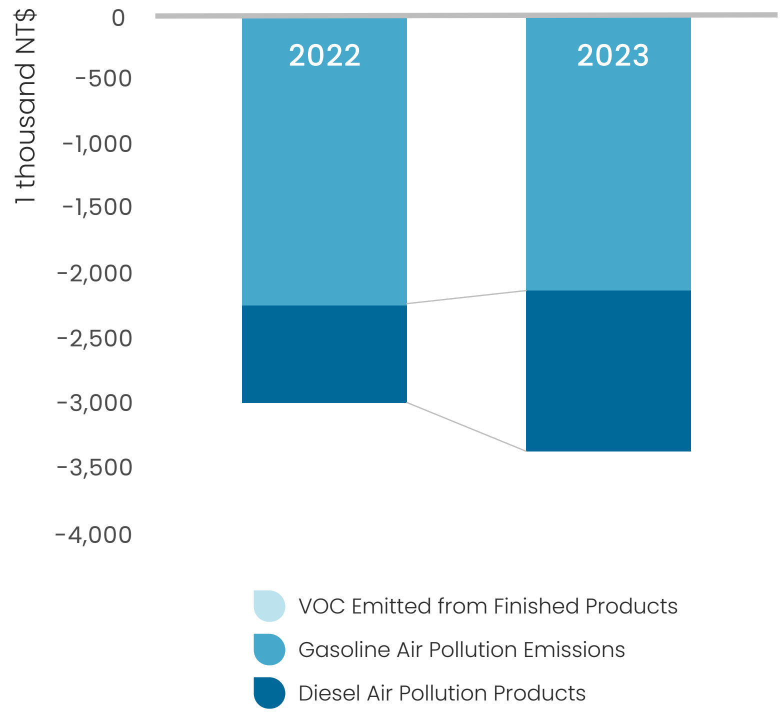
Air Pollution Emissions

Air pollutants include direct emissions or those formed through secondary reactions with other elements, leading to an increased incidence of respiratory and cardiovascular diseases (WHO, 2006; HEIMTSA, 2011; Burnett et al., 2014; Lelieveld et al., 2015). Specifically, emissions of nitrogen oxides (NOx) and volatile organic compounds (VOCs) in the atmosphere form ozone through photochemical reactions, which can be inhaled by humans or absorbed by plants, causing damage not only to the respiratory system but also to terrestrial ecosystems. Furthermore, the combustion of gasoline and diesel in engines also produces air pollutants such as nitrogen oxides (NOx), sulfur oxides (SOx), total organic compounds (TOC), carbon monoxide (CO), and particulate matter (PM) (US EPA, 1996). In this report, the environmental externalities derived from the impacts of air pollutants on human health and ecosystems are estimated.

Analysis Results

In 2023, Qisda's production operations emitted 5.8 tons of VOCs, and indirect emissions of air pollutants from the use of gasoline/diesel were 4.7 tons, generating approximately NT$3.37 million in environmental external costs (negative), 99.6% of which came from indirect air pollution emissions due to gasoline/diesel usage. In the production process, Qisda manages emissions from the source, replacing oil-based paints with water-based coatings to reduce VOC emissions. Qisda maintains its usage of gasoline/diesel from the previous year.

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	VOC Emissions, Gasoline/Diesel Usage
Calculation Explanation	Through the Environmental Profit and Loss (EP&L) perspective, valuation factors for air pollution-induced human health and ecosystem damage are calculated based on the US EPA (1996) and the Eco-indicator 99 database. These are supplemented with the Value of a Statistical Life (VSL) method and the Willingness to Pay (WTP) approach to estimate the derived social costs.
References	Sources: US EPA (1996), Eco-indicator 99 database, OECD (2012), PwC UK (2015), CE Delft (2018)



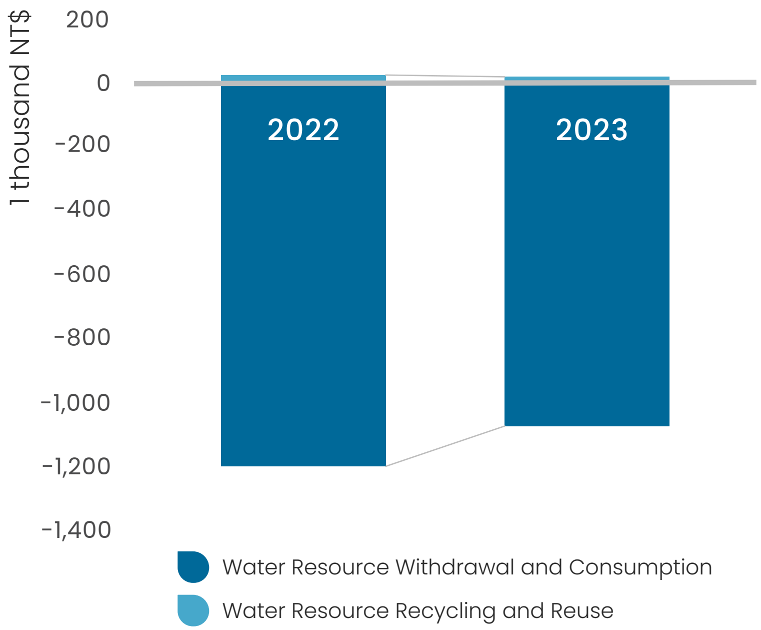
Water Resource Consumption, Recycling and Reuse

Water resource consumption may cause various potential impacts on human health through different pathways. Excessive freshwater consumption can lead to irrigation water shortages, causing crop reductions and resulting in malnutrition (Bayart et al., 2010; Kounina et al., 2013).On the other hand, the lack of clean domestic water can lead to waterborne diseases (WWAP, 2009; Boulay et al., 2011).In this report, it is assumed that the water resource consumption during the company's operational processes directly affects the availability of water for domestic and agricultural users, allowing for the estimation of the environmental externalities derived from human health losses caused by water scarcity.

Analysis Results

Qisda's production process involves only simple assembly operations, which do not require the use of water resources. As such, majority of Qisda's water use comes from the domestic water needed for employee life. In 2023, the water resources used during Qisda's production operations amounted to 410,586 cubic meters, generating approximately NT$1.07 million in environmental external costs (negative). At the same time, the Suzhou factory recycled and reused 8,212 cubic meters of water, resulting in NT$19,000 in environmental external benefits (positive).

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Water Withdrawal
Calculation Explanation	From the perspective of Environmental Profit and Loss (EP&L), considering factors such as the Water Stress Index (WSI) and the Human Development Index (HDI), the potential impacts on human health caused by water demands from Qisda, which lead to agricultural and domestic water shortages in the surrounding areas, are assessed. This is supplemented with the value of a statistical life (VSL) to estimate the social costs derived from losses in human health.
References	Sources: Pfister et al. (2009), LC-Impact (2016), Motoshita et al. (2011), OECD (2012), PwC UK (2015)



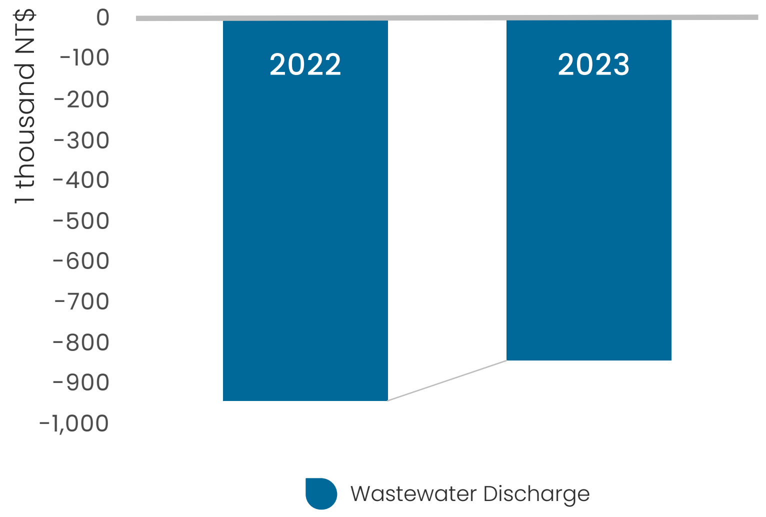
Wastewater Discharge

Pollutants in water bodies can enter the human body through various pathways, including direct intake (such as drinking), indirect intake (such as bioaccumulation), and direct inhalation (such as evaporation), with heavy metals and chemicals being major sources of toxicity to the human body. These pollutants are often emitted into water bodies at low concentrations, and long-term exposure can lead to chronic health impacts such as cancer, adverse pregnancy outcomes, and reduced mental and central nervous function (PwC UK, 2015; CE Delft, 2018). In this report, the main consideration is the environmental footprint generated by wastewater treatment and discharge processes that may cause losses to human health, resulting in environmental externalities.

Analysis Results

The wastewater emissions during Qisda's production operations primarily come from employees' domestic sewage. In 2023, the wastewater discharge was 328,469 cubic meters, generating approximately NT$840,000 in environmental external costs (negative). The destination of domestic sewage discharges from Qisda's global facilities is the sewage management system, which does not directly affect water bodies and land.

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Wastewater Discharge Volume
Calculation Explanation	From the perspective of Environmental Profit and Loss (EP&L), the potential human health impacts of industrial wastewater treatment processes are considered and supplemented by the Value of Statistical Life (VSL) method to estimate the social costs derived from losses in human health.
References	Sources: ReCiPe 2016 database, OECD (2012), PwC UK (2015)



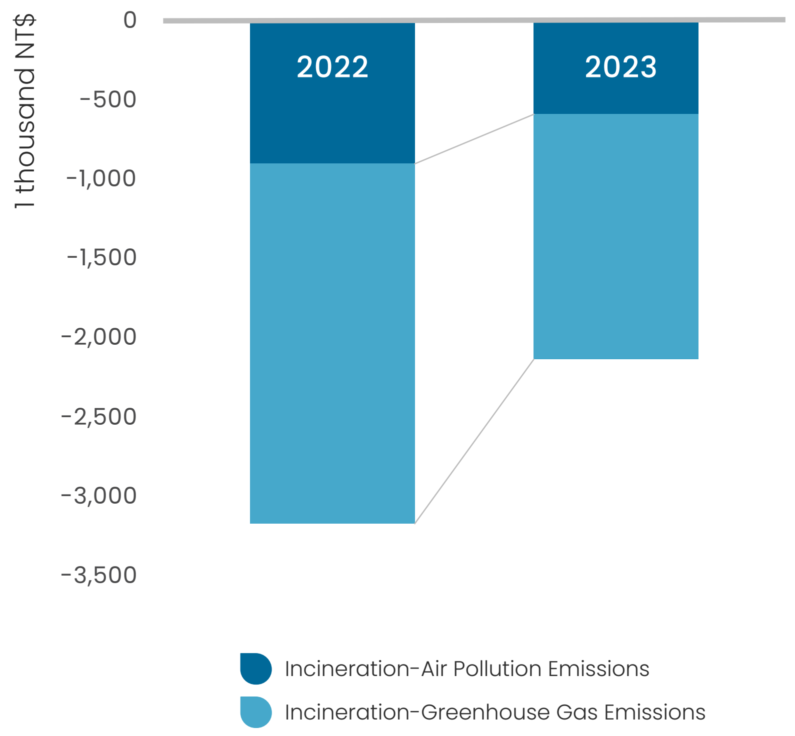
Waste Disposal

The incineration process of waste generates various air pollutants, primarily particulate matter (PM), nitrogen oxides (NOx), sulfur oxides (SOx), dioxins, and heavy metals, which can have significant impacts on human health, such as cancer or loss of intelligence (EXIOPOL, 2009; PwC UK, 2015); atmospheric deposition of inorganic substances (such as sulfates, nitrates, and phosphates) can lead to soil acidification and impact terrestrial ecosystems (Goedkoop et al., 1999; Hayashi et al., 2004).In this report, the potential impacts of air pollutants emitted during the waste incineration process on human health and ecosystems, as well as greenhouse gases produced during the combustion or decomposition of waste in incinerators and landfills, are taken into consideration when calculating the resulting environmental externalities.

Analysis Results

In 2023, Qisda's production operations generated and incinerated 1,760 tons of waste, resulting in approximately NT$2.14 million in environmental external costs (negative), of which 72% came from greenhouse gas emissions generated during the incineration process. In addition to implementing waste reduction at manufacturing sites, Qisda adheres to the principle of responsible production, regularly auditing waste treatment operators to ensure proper waste management.

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	General and hazardous waste production
Calculation Explanation	From the Environmental Profit and Loss (EP&L) perspective, the potential impacts of air pollutants derived from the waste incineration process on human health and ecosystems are considered, supplemented by the Value of Statistical Life (VSL) method and Willingness to Pay (WTP) approach to estimate the derived social costs. Additionally, the dry weight of various types of waste, the organic carbon content, the fossil content carbon, and the combustion efficiency of incinerators are considered to estimate the greenhouse gas emissions and the social cost of carbon derived from waste incineration.
References	Sources: LC-Impact (2016), USEtox (2017), IPCC (2006), US EPA (2016), OECD (2012), PwC UK (2015), CE Delft (2018)



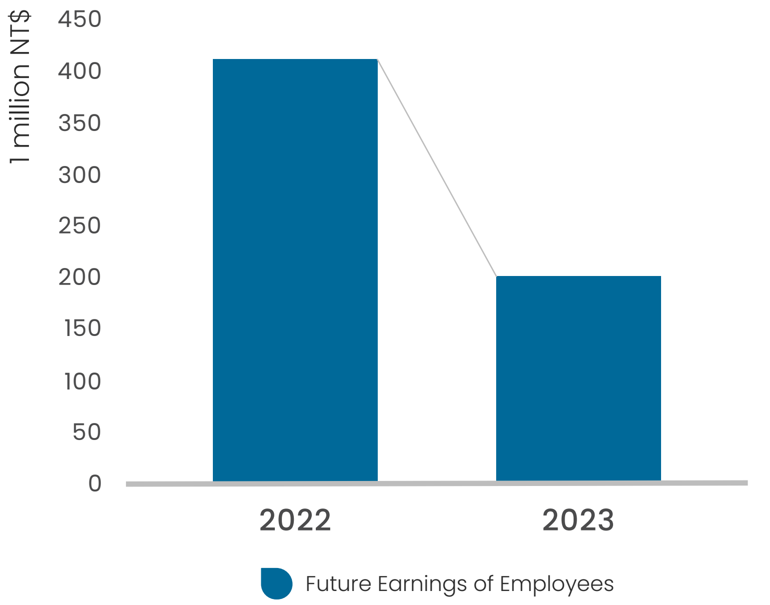
Future Earnings of Employees

The experience and skills of employees are crucial for the long-term development of the company, not only enhancing productivity and thereby increasing revenue but also strengthening the employability of employees, bringing better future career prospects and salary income, and enhancing their quality of life and purchasing power. In this report, the main assessment is on the technical prowess and knowledge employees acquire through company training programs, which enhances their competency and advances their career development, consequently boosting their earnings and creating social externalities.

Analysis Results

Qisda provides a diverse career development blueprint and invests ample resources in integrating physical and online learning platforms to facilitate the employees' acquisition of knowledge and skills needed for their positions. In 2023, Qisda's global operational sites conducted a total of 128,798 hours of employee training, with an average of 22 hours per person. Through the provision of diverse educational programs, employees are able to further their expertise in their roles, creating NT$200 million in anticipated salary growth benefits for future career development (positive).

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Employee Training Hours, Average Salary, Pay Raise Rate, Turnover Rate
Calculation Explanation	Referencing the VBA (2021) methodology, through factors such as employee salaries, training hours, pay raise rates, turnover rates, retirement age, and discount rates, it is estimated that the company's provision of training resources, which facilitate the accumulation of experience and enhancement of skills for employees, contributes to the societal benefits through the expected annual growth in salary income during their career development.
References	VBA (2021)



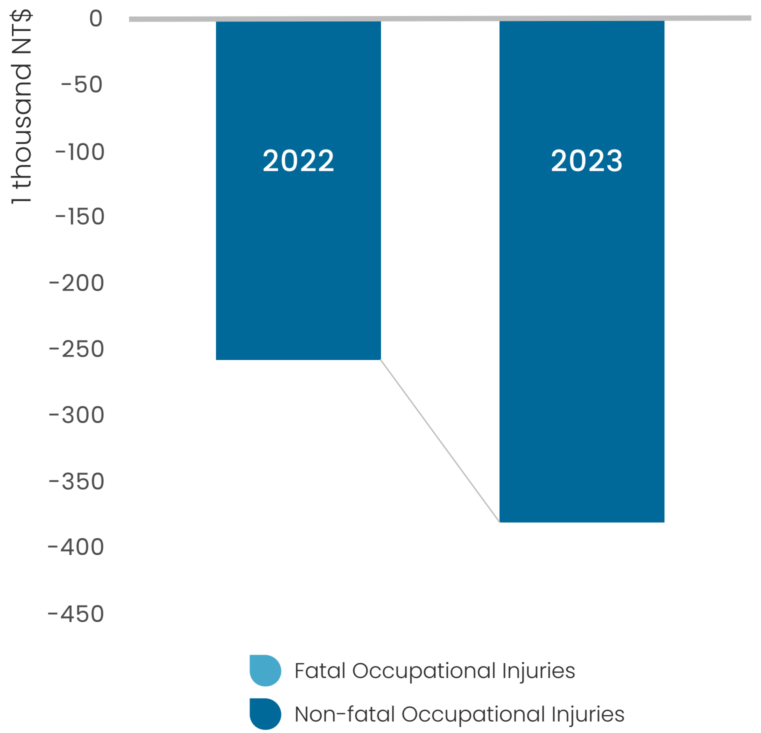
Employee and Contractor Occupational Accidents

Employees may suffer occupational accidents leading to diseases, injuries, disabilities, or death due to the workplace's buildings, machinery, equipment, raw materials, materials, chemicals, gases, steam, dust, operational activities, and other work-related causes. Research by the UK Health and Safety Executive (HSE, 2020) indicates that the social costs arising from occupational accidents include financial costs and human capital costs (HSE, 2020). In this report, disabling injuries and fatalities are included in the assessment, with financial costs encompassing productivity losses and occupational injury compensation. Human capital costs include the willingness to pay to prevent occupational injuries and the economic losses caused by fatalities due to occupational accidents. This assessment is used to calculate the social externalities derived from occupational accidents.

Analysis Results

In 2023, occupational accidents at Qisda's global operational sites (including commuting accidents) resulted in a total of 169 days of disability injury losses, creating a social cost of NT$380,000 (negative). The injuries were primarily physical hazards such as entanglement, pinching, and crushing, with no chemical, biological, or ergonomic hazards, and no fatalities were reported. There were also no occupational injuries or deaths among contractors working on-site. In response to occupational accidents, Qisda not only implements effective corrective measures but also conducts investigations into similar types of machinery and equipment to assess protective mechanisms and preventive measures to avoid the recurrence of incidents.

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Number of employees due to occupational accidents, days lost, and compensation for occupational accidents
Calculation Explanation	The social costs derived from occupational accidents are calculated according to the HSE (2020) methodology. Financial costs include loss of productivity, medical and rehabilitation expenses, administrative and legal expenses, salaries, and insurance compensations, etc.; labor costs refer to the value that individuals are willing to pay to reduce the risk of occupational injury or death. Loss of productivity, salary compensation, and administrative and legal expenses have been reflected in the Company's financial statements. Expenses for medical care and rehabilitation of workers involve personal privacy and are therefore excluded from calculation.
References	HSE (2020), VBA (2022), Chun-Chieh Ho (2005), Charng-Cheng Tsaur et al. (2013)



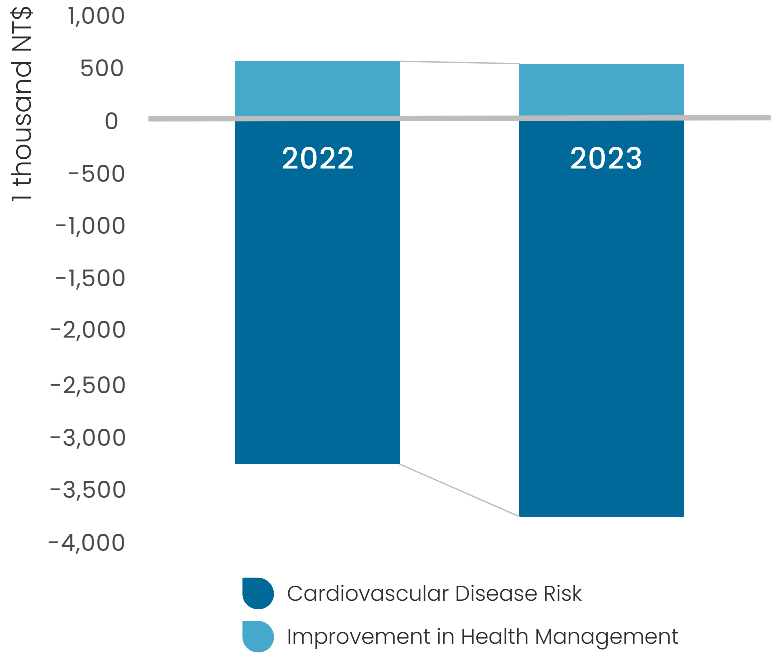
Employee health risk and management

According to the statistics of the Ministry of Health and Welfare, cardiovascular disease has always been one of the top three leading causes of death in Taiwan. Epidemiological studies have shown that factors such as hypertension, high cholesterol, diabetes, and being overweight may cause cardiovascular diseases (Anderson et al., 1991). From the perspective of attributable risk, this report evaluates the medical costs that have been avoided by reducing the number of employees suffering from cardiovascular diseases through regular health checkups, personalized health management, and various health promotion activities.

Analysis Results

Comprehensive health checks can detect potential diseases early. Qisda conducts annual health checks for employees, and in 2023, approximately 97% of employees at global operational sites participated in these checks. It was found that those with risk factors for cardiovascular diseases such as high blood pressure, high blood sugar, high cholesterol, and being overweight could potentially incur NT$3.77 million in future medical costs (negative). Qisda manages and follows up based on the results of the health checks, assisted by Disease State Health Assessments (DSHA) and the Framingham Risk Score, which have improved and controlled the health of employees, thus avoiding NT$540,000 in medical costs (positive).

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Employee Health Checks and Health Management Information
Calculation Explanation	Referencing the Impact-Weighted Accounts (IWA) methodology from Harvard Business School, consider the causal relationship between the employees' workload and potential risk factors for cardiovascular diseases such as high blood pressure, high cholesterol, high blood sugar, and being overweight , as well as the potential medical resources required; simultaneously, Qisda considers the medical costs avoided due to the company's individual health management, which effectively controls the risk of cardiovascular diseases in employees.
References	WHO (2008), Chieh-Hsien Li (2010)



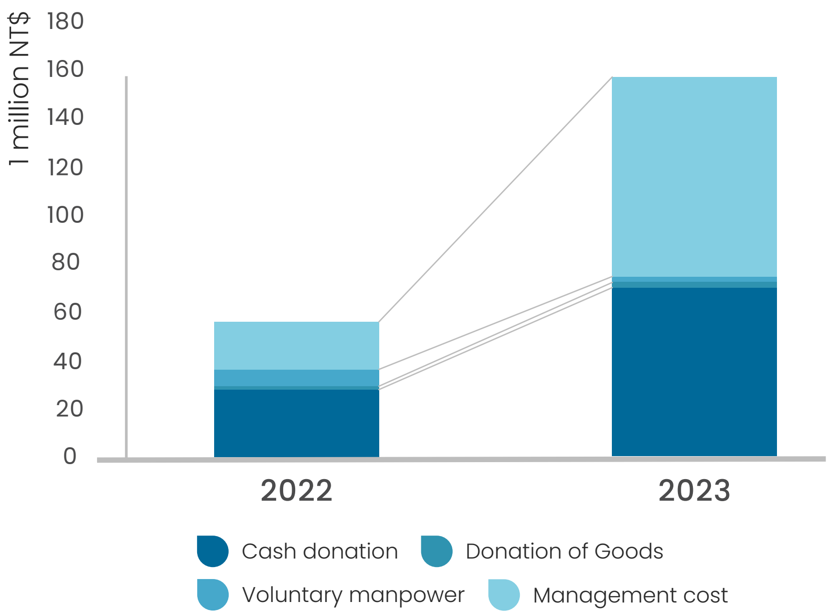
Social Input Value

The broader meaning of corporate community investment is the voluntary participation of businesses in charitable organizations or activities beyond the scope of their core business activities (Corporate citizenship, 2020). In this report, the effectiveness of charitable activities is measured from the perspectives of cost and benefit, as well as the value created for beneficiaries and shareholders, thus serving as a decision-making guide for future charitable investments.

Analysis Results

In 2023, Qisda's investments in public welfare projects generated a social impact of NT$160 million (positive), with contributions including cash donations (44.5%), time investments (1.5%), provision of goods and services (1.6%), and management expenses (52.4%). The public welfare blueprint integrates the core and resources of Qisda and the BenQ Foundation, focusing on environmental sustainability, digital opportunities, quality education, and cultural value as major goals. This approach promotes positive community engagement externally and deepens the cultivation of corporate culture internally, thereby fostering exceptional talent and shaping good corporate citizens.

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Investment Amount and Resources in Public Welfare Projects
Calculation Explanation	Using the Business for Societal Impact (B4SI) community investment assessment mechanism, the cash, goods, time, and management costs invested in charitable activities are calculated, and the quantified benefits of various projects are assessed and distributed.
References	Corporate Citizenship (2020)



▪ Downstream Products and Services

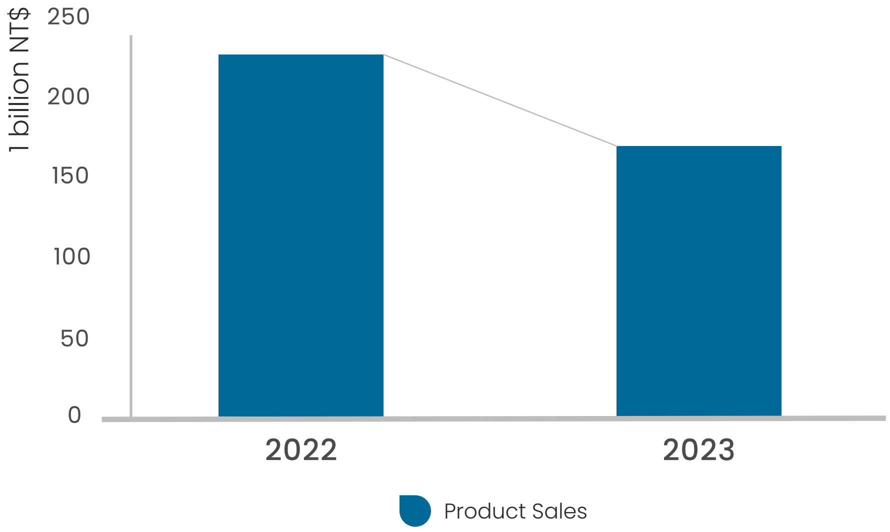
Product Sales Boosting Industry Chain Output

Through its innovative and diverse product design capabilities, profound R&D expertise, high-quality and flexible global manufacturing capabilities, vertical integration of group resources, and outstanding industrial design strengths, Qisda continues to lead globally in sectors such as LCD displays and projectors. This not only brings success to its customers but also indirectly boosts the output value of the industry chain. In this report, factors such as product sales volume, industry supply and demand relationships, customer industry categories, and output value are considered to assess the social external benefits created by the product sales process.

Analysis Results

In 2023, Qisda's product sales led to NT$169.6 billion in social external benefits (positive) by boosting the output value of customer industries. Due to factors in 2023 such as war conflicts, the Chinese housing debt crisis, and inflation-related interest rate hikes, the recovery pace of the market was affected, resulting in a downward trend in the environmental and social externalities generated by the overall products. Looking forward to 2024, Qisda will continue to move towards our goal of "Achieving Over 50% of Profit from High Value-Added Business by 2027."

Assessment Boundaries	Qisda Global Production and Operational Sites
Activity Data	Product Sales Revenue
Calculation Explanation	Using the assessment method from BASF (2017), the sales amount is reasonably allocated based on the supply and demand relationship with customer industries, calculating the indirect economic value created for customer industries during the sales process.
References	BASF (2017)

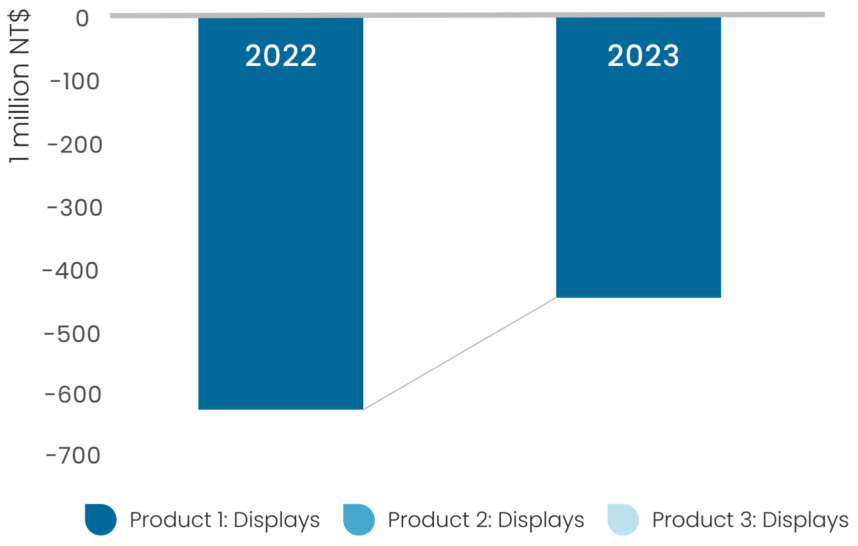


Product Use and Disposal

Qisda's products, depending on their different end-use purposes, generate indirect greenhouse gas emissions during the use and disposal stages due to energy consumption, which in turn derives a social cost of carbon. In this report, through the perspective of Life Cycle Assessment (LCA), the indirect greenhouse gas emissions generated from the use to disposal stages of the top three selling display products are analyzed, and the environmental externalities caused by production operations are calculated using the social cost of carbon (SCC).

Analysis Results

In 2023, Qisda's display products resulted in the emission of 280,000 metric tons of greenhouse gases due to end-use purposes, generating approximately NT$450 million in environmental external costs (negative). Qisda introduced an internal carbon footprint calculation system in 2010 and has continuously promoted product weight reduction and power consumption reduction during the design stage to decrease greenhouse gas emissions over the product lifecycle, thereby advancing the continuous development of green technologies.



Assessment Boundaries	Qisda Display Products
Activity Data	Greenhouse Gas Emissions During Product Use and Disposal Stages
Calculation Explanation	Based on the GHG Protocol methodology, the energy consumption over the product lifecycle is calculated according to the end-product use scenarios and lifespan, as well as the weight of non-recyclable components to estimate the greenhouse gas emissions derived from the disposal stage and the associated social cost of carbon.
References	WRI & WBCSD (2013)、US EPA (2016)

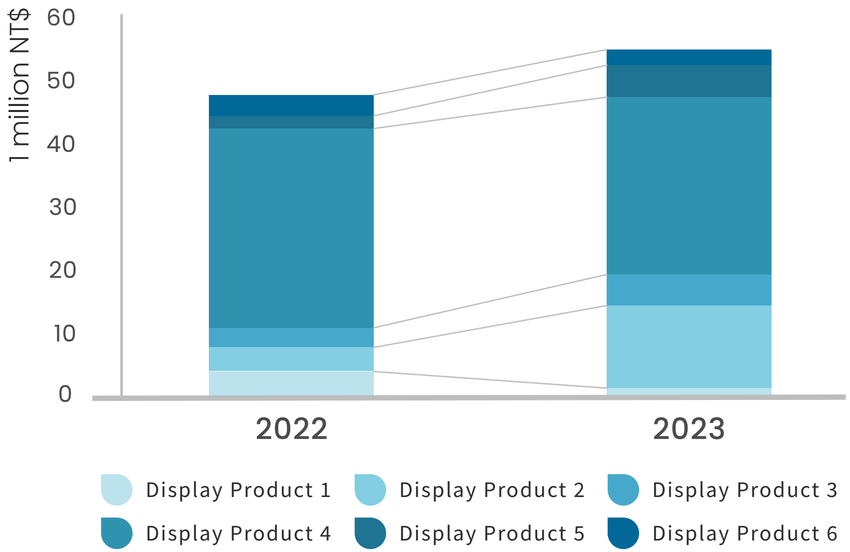
Energy Saving Benefits of Products

Qisda integrates lifecycle thinking into its product design process by incorporating green design goals at the early stages of design. During each design phase, products are checked to ensure they not only comply with customer requirements and regulatory standards of the sales countries but also achieve self-improvement. This includes enhancing energy efficiency and reducing resource consumption, aimed at minimizing the product's carbon footprint. In this report, we analyze the environmental external benefits derived from the energy saving of products, which prevent greenhouse gas emissions during the product use phase.

Analysis Results

In 2023, Qisda's energy-efficient product designs helped customers avoid 34,000 metric tons of greenhouse gas emissions during the usage phase, resulting in approximately NT$55.23 million in environmental external benefits (positive). Qisda has mapped the future for 2025 and continued promoting the green design 555 (energy saving, consumption reduction, carbon reduction) plan to reduce the product's impact on the environment and increase the efficiency of products, further provide products of even better quality to customers, and establish sustainable value in the products.

Assessment Boundaries	Qisda Display Products
Activity Data	Energy Saving Benefits of Products
Calculation Explanation	Considering the energy saved during the usage phase by the product's energy-efficient design compared to older generations, the avoided greenhouse gas emissions and the associated social cost of carbon are estimated.
References	US EPA (2016)



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