Chien Hsing Agriculture Technology Co., Ltd.

Chien Hsing Agriculture Technology Co., Ltd. (Uniform Business No.: 83269951)

2025 ESG Sustainability Report

(Official Version 1.1 | Prepared with reference to GRI 2021, SASB, TCFD and ISO 14064-1)

Safeguarding Soil Health | Advancing Biological Circularity | Driving Net-Zero Transformation in Agriculture

Turning Waste into Value | Three-Pillar Patent Portfolio | Dual Outputs from One Waste Stream | Three-Track Business Model | Social Care in Action

Publication and Preparation Summary:

• Issued by: Chien Hsing Agriculture Technology Co., Ltd. (Uniform Business No.: 83269951)
• Chairperson and Chief Sustainability Officer: Vanessa Hu
• Factory Registration No.: 09001239 (Yunlin Science and Technology Industrial Park demonstration plant, 1,500 ping)
• Registered office and operating site: No. 11, Kegong 12th Rd., Huxi Vil., Douliu City, Yunlin County
• Official website: https://www.chienhsing.com/
• Paid-in capital: NT$80,000,000 (Authorized capital: NT$100,000,000)
• Report version and period: Version 1.1 | January 1–December 31, 2024 (including the latest implementation progress, verified figures and forward-looking strategies in 2025)
• International standards referenced: GRI Standards 2021, SASB (FB-AG), TCFD, ISO 14064-1:2018 and UN SDGs
• Official service hotline: +886-5-5350-286 | Email: vanessa0738@gmail.com

[Executive Summary: 2024–2025 Sustainability Performance Dashboard of Chien Hsing Agriculture]

Core ESG Indicator	2024–2025 Performance	Strategic Significance and Quantified Benefits
2024 base-year GHG emissions	348.27	Metric tons CO_2e/year (ISO 14064-1 inventory boundary); 15% reduction by 2027, 30% by 2030, and net zero by 2040
Agricultural-waste resource-recovery rate	95.2%	More than 3,000 metric tons processed monthly and over 30,000 metric tons annually; closed-loop conversion of nine organic-waste categories
Boundary odor improvement	58% reduction	Odor value reduced from 38 to 16; all 18 consecutive tests passed. NT$5.02 million invested in negative-pressure systems and three-stage scrubbing/biofiltration
Paid-in capital growth	NT$80 million	Sixteenfold growth in five years (NT$5 million in 2020 → NT$80 million); CAGR of 75%
Verified farmer yield gains and disease control	+15% to +20%	Rice yields +15%; pineapple yields +20% (Brix +1.8 degrees). Dagenwang No. 1 is included in the Agriculture and Food Agency's NT$2+2 subsidy recommendation list
Local employment and inclusion	75% / 10%+	Yunlin local employment of 75%; persons with disabilities above 10% of workforce. Compensation and benefits 30%–50% above industry levels
Longstanding government-contract trust	NT$50+ million	Cumulative organic-waste contracts for New Taipei City Environmental Protection Department; 40–60 metric tons of household food waste processed daily, serving nearly four million people

Cross-sector green closed loop	Three-party mutual benefit	President Chain Store “surplus food to fresh food” initiative and Taiwan Fertilizer PPP carbon-sequestration project

Chapter 1: Statement of Commitment and Personal Reflections by the Chairperson and Chief Sustainability Officer: Turning Waste into Value for a Sustainable Taiwanese Agricultural Sector

[Chapter Overview] A sustainability declaration and personal reflections written by Vanessa Hu, Chairperson and Chief Sustainability Officer. She describes how, as a female leader, she nurtures circular agriculture with the same care devoted to managing a household; how founder Liu Chien-Feng's five years of research have been carried forward into a new generation of international growth; how the three-pillar patent portfolio and "dual outputs from one waste stream" create threefold value; and how the Company candidly addressed the 2024 odor challenge by investing NT$5.02 million in comprehensive improvements.

"Building Sustainability through Circularity, Turning Agricultural Waste into Fertile Soil": Vanessa Hu's Founding Purpose and Convictions

Dear shareholders, business partners, farmers, and members of the public who care about Taiwan's land:

When I assumed the role of Chairperson of Chien Hsing Agriculture Technology, what came to mind was not a grand slogan about capital, but a simple idea deeply rooted in the land: there should be no such thing as "waste" in agriculture. What we call waste is merely a resource in the wrong place.

Taiwan generates several million metric tons of agricultural waste every year, including livestock and poultry manure, food waste, fruit and vegetable residues, feathers, spent mushroom bags, and food-processing sludge. To many, these are foul-smelling environmental burdens to be avoided. To me, every metric ton represents precious nutrients that Taiwan's soil—depleted by decades of excessive chemical fertilizer use—is waiting to receive for regeneration.

"Building Sustainability through Circularity, Turning Agricultural Waste into Fertile Soil" is not a slogan. It is the conviction that guides every Chien Hsing employee as we start up our fermentation

equipment each morning and evening. From day one, we have created value from waste, returned our products to the land, and worked to eliminate the word “waste” from the vocabulary of agriculture.

As a female entrepreneur and leader, I believe the circular economy is much like caring for a household: every item has value and can make its greatest contribution when placed where it belongs. Just as in managing a home, we must know where everything is, how it is used, and where it goes afterward. This is the quiet determination and core belief with which the Chien Hsing team practices the circular economy every day.

Governance Succession and Innovation: Founder Liu Chien-Feng’s Five-Year Foundation and New-Generation Leadership

The growth of Chien Hsing Agriculture Technology has been a journey of “heritage and innovation advancing together”:

Chien Hsing Agriculture Technology was founded on February 3, 2021 (Uniform Business No.: 83269951; Factory Registration No.: 09001239). Founder Mr. Liu Chien-Feng devoted five full years to research in the field and the laboratory, overcoming challenges in the acclimation of extremophilic strains and the design of high-temperature equipment, thereby establishing the Company’s strong foundation in circular technologies.

I assumed the roles of Chairperson and Chief Sustainability Officer in November 2024, taking responsibility for leading the Company toward scale, institutionalization, and internationalization. We are implementing a dual-track strategy of “global promotion and local implementation”:

This intergenerational succession and continuity of governance enabled Chien Hsing Agriculture to increase paid-in capital from NT$5 million at establishment to NT$80 million within just five years, against authorized capital of NT$100 million. With a compound annual growth rate (CAGR) of 75%, the Company has achieved an exceptional combination of purpose-driven operation and sound profitability.

Technological Breakthroughs: The Three-Pillar Patent Portfolio and “Dual Outputs from One Waste Stream, Threefold Value”

As Chairperson and Chief Sustainability Officer, I have personally led the commercialization of our patented fermentation technologies. Chien Hsing’s core technological strengths rest on a three-pillar patent portfolio:

1. Process patents (Patent Nos. I841970 and 202346243): Our proprietary three-stage fermentation process comprises low-temperature initiation (20–35°C), mesophilic acceleration (35–55°C), and high-temperature sterilization (55–100°C+). It completes within 24–48 hours a transformation that would take months in conventional open-air composting. Peak fermentation temperatures exceed 100°C, thoroughly eliminating pathogens, parasite eggs, and weed seeds. The resulting biosafety standard permits safe application to food crops.

2. Biological patents: We independently cultivate dominant consortia of microorganisms tolerant to extreme heat, salinity, acidity, and alkalinity. These consortia retain high extracellular enzyme activity in harsh substrates, rapidly breaking down high-fiber and high-nitrogen feedstocks while preserving humic acids and organic nutrients.

3. Equipment patents: Our commercial-scale, multi-feedstock rapid-fermentation reactor can process nine categories of organic waste simultaneously. Automated negative-pressure containment controls odors and physically enables a green closed loop with “zero wastewater and zero air pollution” at the plant.

In 2025, I led my team in delivering a strategic breakthrough: “dual outputs from one waste stream.” Through two parallel fermentation pathways, the same batch of organic waste yields both premium organic fertilizer and high-protein fermented aquaculture feed. This substitutes for wild-caught fishmeal associated with overfishing (SDG 14: Life Below Water) and uses probiotics instead of chemical antibiotics to safeguard aquaculture food safety. This was no accidental discovery; it is the strategic outcome of the

forward-looking “commercial fertilizer and feed conversion technology” embodied in Patent I841970.

▸ Patent Portfolio and Core Technological Achievements of Chien Hsing Agriculture Technology

Patent/Certification Category	Certificate or Patent No.	Technological Innovation	Environmental and Commercial Benefits
Process invention patent	I841970	Low-, medium- and high-temperature three-stage rapid fermentation (24–48 hours)	Eliminates pathogens and weed seeds, prevents methane leakage, and completes conversion within 24 hours
Equipment utility-model patent	202346243	Enclosed continuous fermentation reactor for multiple organic feedstocks	Negative-pressure odor containment; handles nine organic-material categories; reduces energy consumption by 40%
Commercial technology breakthrough	Trade secret/patent deployment	“Dual outputs from one waste stream”: organic fertilizer and aquaculture feed from the same feedstock	Substitutes for imported wild-caught fishmeal (SDG 14) and creates a second growth engine in aquaculture feed
Official fertilizer registrations	Six national fertilizer manufacturing (quality) registrations	Dagenwang-series organic fertilizer product certifications	Included in the Agriculture and Food Agency’s recommended brands for domestic organic-fertilizer subsidies
International export certification	Halal certification	Compliant with Muslim hygienic-production and Islamic dietary requirements	Qualified for exports to Southeast Asian and Middle Eastern markets

Note: Sources: Chien Hsing Agriculture Technology Intellectual Property Management Center and the Intellectual Property Office, Ministry of Economic Affairs.

Personal Reflections of the Chief Sustainability Officer: Candidly Addressing and Overcoming the 2024 Boundary Odor Challenge

Regarding the environmental penalty recorded in 2024, I have chosen to address it proactively, transparently, and sincerely in a prominent section of this Report.

Odor control during fermentation was once one of Chien Hsing's most severe environmental challenges in implementing the circular economy. In 2024, when the Yunlin Science and Technology Industrial Park plant was operating at full capacity amid extreme temperature-inversion and subsidence weather conditions, the boundary odor reading reached 38, resulting in a regulatory penalty. On the day we received the notice, I could not sleep. I told every manager: "This penalty cannot simply be paid and forgotten. It is a warning from the land and our neighbors, and a test that Chien Hsing must pass on its journey to become a world-class enterprise."

I offered no excuses and did not evade responsibility. From 2024 through 2026, we invested a total of NT$5.02 million in a comprehensive odor-abatement program:

1. Whole-facility negative-pressure airflow system: Fermentation workshops are maintained at a constant pressure of −15 Pa, and dual high-speed automatic air-curtain interlocking doors are installed at feedstock inlet and discharge points.

2. Three-stage hybrid odor-scrubbing and purification system: Stage-one acidic spray scrubbing for ammonia removal (99% removal efficiency); stage-two alkaline oxidation scrubbing for mercaptan decomposition; and stage-three advanced degradation of organic odor molecules through an active probiotic biofilter.

3. Verified results: Following completion of the improvements, blind testing by an accredited third-party laboratory showed that the boundary odor value fell from 38 to 16, well below the regulatory limit of 50—a 58% improvement. All 18 subsequent official spot checks and inspections were passed, and complaints from nearby residents fell to zero.

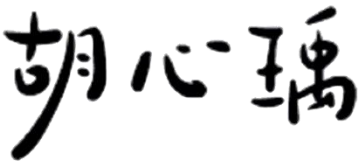
This profound experience has reinforced my conviction that genuine sustainability does not mean claiming never to have made a mistake. It means accepting responsibility, making every effort to improve, and continuing to do better. Our verified improvement results are the strongest evidence of our integrity and environmental commitment, and demonstrate our utmost respect for the principles of transparent disclosure upheld by TCSA and its review panel.

Human Care, Social Responsibility, and Our Commitment to a Sustainable Future

Sustainability is not merely a set of impersonal greenhouse gas inventory figures; it is also a commitment to care for people and the land.
At Chien Hsing, we foster a caring corporate culture. Every two months, employees receive two movie tickets and one book. Our internal book-exchange program encourages each employee to read six books a year; the Company has accumulated more than 100 books, which are donated to rural schools after being read, creating a “zero-waste cycle of knowledge.”
We also provide educational scholarships for employees’ children (NT$500 in Eslite book vouchers for students in junior high school or below, NT$1,000 for students from grade 9 through grade 12, and NT$3,000 for university students), with equal treatment for the children of foreign employees.
We maintain employment of persons with disabilities at more than 10% of our workforce, far exceeding the statutory requirement of 3%, and our compensation structure is 30%–50% above industry levels, enabling every colleague to work with dignity and achieve personal growth in an accessible environment. Before the 2025 Lunar New Year, my team and I went to Taichung Railway Station in the cold of winter to distribute 1,200 charity meals. The ingredients were high-quality agricultural products that did not meet market appearance standards, extending our mission “from farm to table, and onward to social care.”
I also personally use short-video platforms—TikTok (@ocean14134), YouTube (“Chien Hsing Agriculture Chairperson x Vanessa”), and Facebook—to promote circular agriculture to farmers and consumers in plain language, breaking down technical barriers so that everyone can participate in climate action.

“Building Sustainability through Circularity, Turning Agricultural Waste into Fertile Soil” is more than a statement. It is my solemn promise to the land, to farmers, and to future generations.

Vanessa Hu, Chairperson and Chief Sustainability Officer



Respectfully submitted

Chapter 2: Company Profile, Organizational History, and Circular Vision

[Chapter Overview] Detailed disclosure of Chien Hsing Agriculture Technology's registration information, Uniform Business No. 83269951, sixteenfold capital growth over five years, the operating capacity of its 1,500-ping Yunlin Science and Technology Industrial Park demonstration plant, and its core mission aligned with international circular economy standards.

Statutory Registration Information and Corporate Structure

Chien Hsing Agriculture Technology Co., Ltd. was founded on February 3, 2021. Its operating headquarters and core R&D demonstration base are located in the Douliu Science and Technology Industrial Park in Yunlin County, a major agricultural region of Taiwan. The Company specializes in organic-waste resource-recovery technologies, patented high-speed fermentation machinery, cultivation of highly active extremophilic microbial strains, production of Dagenwang-series bio-organic fertilizers, and soil-microbiome carbon sequestration and restoration.

According to official registration records of the Department of Commerce, Ministry of Economic Affairs, the Company's paid-in capital was NT$80,000,000 as of 2025, against authorized capital of NT$100,000,000. The sixteenfold expansion of capital within five years demonstrates the strong confidence of capital providers and government partners in Chien Hsing's circular economy model.

▸ Statutory Registration Information of Chien Hsing Agriculture Technology Co., Ltd.

Registration Item	Statutory Details	Registration Authority / Remarks
Company name	Chien Hsing Agriculture Technology Co., Ltd.	Approved by the Department of Commerce, Ministry of Economic Affairs
Uniform Business No.	83269951	Tax authority registration number
Date of incorporation	February 3, 2021	Department of Commerce

Representative	Vanessa Hu	Chairperson and Chief Sustainability Officer
Authorized capital	NT$100,000,000	Authorized share capital
Paid-in capital	NT$80,000,000	NT$5 million in 2020 → NT$80 million in 2025 (CAGR >75%)
Factory Registration No.	09001239	Factory registration certificate issued by Yunlin County Government
Registered office and operating site	No. 11, Kegong 12th Rd., Huxi Vil., Douliu City, Yunlin County	Yunlin Science and Technology Industrial Park demonstration plant (1,500 ping)
Yunlin administrative office	No. 39, Nanjing W. Rd., Douliu City, Yunlin County	Farmer technical guidance and local administration center
Official service hotline	+886-5-5350-286	Dedicated customer-service and consultation line
Official email	vanessa0738@gmail.com / esg@chienhsing.com	Sustainability and business contact
Official website	https://www.chienhsing.com/	Corporate website and product information

Operating Sites and Capacity Specifications of the Yunlin Science and Technology Industrial Park Demonstration Plant

Chien Hsing Agriculture uses the Douliu Science and Technology Industrial Park in Yunlin as its demonstration and operations hub:

- **Yunlin Science and Technology Industrial Park demonstration plant (1,500 ping; Factory Registration No. 09001239): Equipped with four large patented three-stage continuous fermentation reactors, automated feeding and discharge mechanisms, a slight-negative-pressure odor extraction duct system, and a three-stage chemical and biological wet-scrubbing biofilter.**
- **Stable monthly processing capacity of 2,000–3,000 metric tons, with maximum monthly receipts of up to 3,700 metric tons. Annual**

processing of agricultural and organic waste exceeds 30,000 metric tons (31,450 metric tons in 2024).

- **An on-site extremophilic-strain laboratory serves as an incubation center for purifying highly active strains, testing enzyme activity, and rapidly screening soil microbiomes. The site also demonstrates turnkey equipment manufacturing and technology-export capabilities.**

Corporate Vision, Core Mission, and Alignment with International Frameworks

- **Core Vision: "There should be no waste in agriculture"—waste is merely a resource in the wrong place. We aim to give every rice straw and every metric ton of livestock and poultry manure new life, leaving fertile and clean land for future generations.**
- **Corporate Mission: To overcome the limitations of conventional composting through proprietary biological technologies; to implement "dual outputs from one waste stream" and turn waste into value; to provide farmers with affordable, high-performance organic inputs; to help government reduce incineration burdens; and to build a closed-loop circular economy.**
- **Comprehensive alignment with international frameworks:**

– The three circular economy principles of the Ellen MacArthur Foundation: eliminate waste and pollution by design; circulate products and materials; and regenerate natural systems.

– The ISO 59000 family of circular economy standards, the World Economic Forum's PACE cross-industry collaboration framework, and four-stage life cycle assessment (LCA).

– The United Nations Sustainable Development Goals, with particular emphasis on SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), SDG 15 (Life on Land), and SDG 17 (Partnerships for the Goals).

Chapter 3: Sustainability Governance Structure and Committee Operations

[Chapter Overview] A sustainability governance system under direct Board oversight, with Vanessa Hu serving concurrently as Chairperson and Chief Sustainability Officer (CSO). The structure includes a GHG task force, an occupational safety, health and environmental task force, and an ethical management office. ESG indicators account for 30% of executive compensation metrics.

Organizational Matrix and Responsibilities of the Sustainable Development Committee

In 2024, the Board of Directors of Chien Hsing Agriculture formally approved the establishment of the Sustainable Development Committee (ESG Steering Committee). Chairperson Vanessa Hu serves concurrently as Chief Sustainability Officer (CSO), coordinating climate transition, circular-technology innovation, workplace inclusion, and ethical and regulatory compliance.

Four task forces report to the Committee: the GHG Task Force, Environmental Safety Task Force (E), Social Inclusion Task Force (S), and Ethical Governance Audit Task Force (G). The Committee holds regular quarterly meetings and reports ESG implementation progress to the Board semiannually, ensuring that sustainability decisions are supported by adequate resources and credible execution.

▸ Responsibilities of the Task Forces under the Sustainable Development Committee

Task Force	Lead	Core Management Responsibilities	Annual Principal KPI Targets
GHG Task Force	Plant operations and technology manager	ISO 14064-1 inventory, energy-efficiency optimization, and heat-recovery projects	5% annual carbon reduction; 8% lower electricity use per unit of output

Environmental Safety Task Force (E)	R&D and quality-control manager	Agricultural-waste recovery rate, boundary odor monitoring, and water recycling	Recovery rate >95%; odor value <20
Social Inclusion Task Force (S)	Administration manager	Local employment, disability inclusion, occupational safety (ISO 45001), and training for 1,000 farmers	Local employment ≥75%; zero major occupational accidents
Ethical Governance Audit Task Force (G)	Finance and risk-control adviser	Internal-control compliance, anti-corruption awareness, and green-supplier self-assessments	Zero material penalties; 100% ethics-awareness completion

Close Linkage between Executive Performance Compensation and ESG Key Performance Indicators (KPIs)

To honor its sustainability commitments, Chien Hsing Agriculture has revised its senior-executive performance evaluation rules to incorporate specific ESG indicators into the annual variable-compensation assessments of the President, Vice Presidents, and Plant Managers, with a weighting of 30%:

- **Carbon reduction and energy-efficiency indicators (10%): Reduction in electricity consumption per metric ton processed (kWh/metric ton) and progress of the ISO 14064-1 inventory.**
- **Environmental compliance and neighborhood relations (10%): Pass rate for consecutive boundary odor tests (required to be 100%) and zero environmental complaints.**
- **Occupational safety and social responsibility (10%): Lost-time injury frequency rate (LTIFR = 0), achievement of employment targets for persons with disabilities (maintained above 10%), and farmer-training satisfaction.**

If any material environmental or occupational-safety violation occurs, the relevant executive’s annual bonus will be reduced proportionately, embedding accountability in modern corporate governance.

Chapter 4: Stakeholder Engagement and Materiality Assessment

[Chapter Overview] In accordance with GRI Standards 2021 and the European Union's double-materiality principle, seven stakeholder groups were identified. Impact materiality and financial materiality were assessed, resulting in nine high-priority material sustainability topics.

Regular Engagement Channels and Responses for Seven Stakeholder Groups

Chien Hsing Agriculture has identified seven key stakeholder groups based on responsibility, influence, dependence, and diversity: farmers and production-and-marketing groups; waste-generating enterprises (livestock farms and major food companies); employees; competent authorities (Ministry of Agriculture, Ministry of Environment, and Ministry of Economic Affairs); local communities; shareholders and financial institutions; and academic and research partners (including National Chung Hsing University and the Industrial Technology Research Institute).

The Company maintains regular two-way communication through its official LINE customer-service account, technical seminars, on-site farm guidance, a dedicated service hotline (+886-5-5350-286), and email (vanessa0738@gmail.com).

▸ Stakeholder Engagement Mechanisms and Outcomes of Chien Hsing Agriculture Technology

Stakeholder Group	Key Concerns	Engagement Channels and Frequency	Specific Responses and Outcomes, 2024–2025
Farmers and production-and-marketing groups	Fertilizer efficacy, Agriculture and Food Agency NT$2+2 subsidy,	Field diagnosis and technical seminars (regular/monthly)	Guidance provided to 1,000+ farmers; more than NT$18 million in

	and soil restoration		subsidies secured through end-to-end application support
Waste-generating business partners	Collection timeliness, lawful manifests, and contract stability	Dedicated contacts and waste-traceability manifests (real time/monthly)	Digital manifests established; services provided to President Chain Store and large livestock farms
Local communities	Odor, environmental hygiene, and local employment	Community meetings, village-chief visits, and hotline (monthly/real time)	NT$5.02 million invested in odor abatement; odor value reduced to 16; local employment of 75%
Competent authorities (agriculture/environment)	Air-pollution control, product commercialization standards, and GHG inventories	Official correspondence, periodic filings, and expert guidance meetings (as required)	Expert-guided ISO 14064-1 inventory completed; Dagenwang included in recommendation list
Employees	Compensation, heat-related occupational safety, and development	Labor-management meetings, occupational safety committee, and reading club (quarterly/bimonthly)	Compensation 30%–50% above industry levels; bimonthly movie/book subsidies; disability

			employment above 10%
Financial institutions and shareholders	Capital performance, revenue and profitability, and ESG ratings	Annual shareholders' meeting, Board/supervisor meetings, and financial reports (periodic)	Paid-in capital increased to NT$80 million; recognized by TCSA/TSAA sustainability awards
Academic and research partners	Patent licensing, biochar carbon sinks, and international exports	Project meetings and joint research publications (monthly/project-based)	Collaboration on Czech Republic and China projects; R&D on dual outputs from one waste stream

Double Materiality Analysis

Chien Hsing Agriculture has adopted the double-materiality principle:

1. Impact materiality (inside-out): Assesses the actual positive and negative impacts of operations on the environment and society.

2. Financial materiality (outside-in): Assesses the potential effects of climate and regulatory issues on revenue, gross margin, and financing capacity.

Nine key topics were identified: agricultural-waste resource recovery and circularity; boundary odor and air-pollution control; greenhouse gases and low-carbon transition; product quality and soil safety; R&D, innovation, and patent deployment; occupational safety and employee well-being; local employment and diversity, equity and inclusion; ethical management and compliance; and water and energy efficiency.

Chapter 5: Environmental Sustainability: Decarbonization Pathway, Circularity for Nine Agricultural Waste Categories, and Odor Abatement

[Chapter Overview] Full disclosure of 2024 base-year ISO 14064-1 GHG inventory data (348.274 tCO_2e), including Scope 1 (163.40 metric tons) and Scope 2 (184.88 metric tons); a mass-balance table for 31,450 metric tons of nine agricultural waste categories processed annually (95.2% recovery rate); NT$5.02 million of odor-abatement results (58% reduction); and soil-microbiome carbon-sink benefits.

GHG Inventory Boundary and Methodology (ISO 14064-1:2018)

In accordance with ISO/CNS 14064-1:2018 and the Greenhouse Gas Inventory Guidelines issued by Taiwan's Ministry of Environment, Chien Hsing Agriculture applies the operational control approach to define its inventory boundary.

The inventory covers the Yunlin Science and Technology Industrial Park demonstration plant (No. 11, Kegong 12th Rd., Douliu City, Yunlin County; 1,500 ping) and the Yunlin Administrative Office (No. 39, Nanjing W. Rd., Douliu City). The base year is 2024 (January 1 to December 31). The organizational boundary contains no large on-site boiler, high-voltage gas-insulated switchgear, or regular employee dormitory. The inventory therefore focuses on Category 1 (direct GHG emissions) and Category 2 (indirect GHG emissions from imported energy). Emission factors are drawn from the Ministry of Environment's management tables (version 6.0.4) and the latest electricity emission factor published by the Energy Administration, Ministry of Economic Affairs (0.474 kg CO_2e/kWh).

Detailed 2024 Base-Year GHG Emissions Inventory by Source

Following an inventory conducted by third-party consultants and the internal task force, Chien Hsing Agriculture's total GHG emissions in 2024 amounted to 348.274 metric tons CO_2e:

• Category 1 (direct emissions): 163.397 metric tons CO_2e (46.90%). The principal source was liquefied petroleum gas (LPG) combustion supporting fermentation heating, at 108.981 metric tons CO_2e (31.29%). Diesel combustion in forklifts and material-handling machinery contributed 29.139 metric tons (8.37%); diesel used by

heavy collection trucks, 17.921 metric tons (5.15%); gasoline used by company vehicles, 4.536 metric tons (1.30%); biological decomposition in the on-site domestic septic tank, 2.062 metric tons (0.59%); and minor refrigerant leakage from air-conditioning systems, 0.758 metric ton (0.22%).

• Category 2 (indirect emissions from imported energy): Purchased electricity from Taiwan Power Company generated 184.877 metric tons CO_2e (53.10%), primarily from annual electricity consumption of 390,036 kWh by automated mixing fermentation tanks, blowers, and the slight-negative-pressure extraction system at the Yunlin plant.

▸ Chien Hsing Agriculture 2024 Base-Year ISO 14064-1 GHG Emissions Inventory by Source

Scope / Category	Principal Emission Source / Activity	Annual Activity Data	Unit	Emission Factor	Emissions (tCO_2e)	Share of Plant Total (%)
Category 2 (indirect)	Purchased electricity (production equipment at Yunlin plant)	390,036	kWh	0.474 $kgCO_2e$/kWh	184.877	53.10%
Category 1 (direct)	Auxiliary fermentation heat (LPG)	35,160	kg	3.0996 $kgCO_2e$/kg	108.981	31.29%
Category 1 (direct)	Diesel for heavy fermentation machinery (forklifts/loaders)	10,750	L	2.7106 $kgCO_2e$/L	29.139	8.37%
Category 1 (direct)	Diesel for dedicated feedstock collection trucks	6,612	L	2.7106 $kgCO_2e$/L	17.921	5.15%

Category 1 (direct)	Gasoline for administrative and company vehicles	1,980	L	2.2909 kgCO_2e/L	4.536	1.30%
Category 1 (direct)	Biological decomposition in on-site domestic septic tank	40	Persons (total employees)	Ministry of Environment guideline factor	2.062	0.59%
Category 1 (direct)	Refrigerant leakage from offices and company vehicles	0.4	kg	Composite GWP factor	0.758	0.22%
Plant total	Total GHG emissions within the organizational boundary	–	–	–	348.274	100.00 %

Note: Source: Chien Hsing Agriculture Technology 2024 ISO 14064-1 GHG inventory worksheets (expert-guided calculation version).

Phased Net-Zero and Decarbonization Targets and Action Plans for 2025–2040

Using 2024 emissions of 348.274 metric tons CO_2e as the baseline, Chien Hsing Agriculture has established a rigorous phased decarbonization pathway:

- **Near-term target (2027): Reduce total emissions to no more than 296.0 metric tons CO_2e (15% below the base year). Install a fermentation heat-recovery exchanger at the Yunlin plant to reuse heat from 100°C+ steam for feedstock preheating, reducing auxiliary LPG consumption by 35%. Convert all on-site forklifts to lithium-battery power.**
- **Medium-term target (2030): Reduce total emissions to no more than 243.8 metric tons CO_2e (30% below the base year). Install rooftop solar photovoltaic systems at the Yunlin plant for on-site**

generation and consumption, substantially reducing Scope 2 emissions from purchased electricity.

- **Long-term target (2040): Achieve net-zero emissions in substantive terms through maximum process energy efficiency, procurement of renewable electricity through Taiwan Power Company's wheeling mechanism, and offsets from soil carbon sequestration using biochar, progressing toward net-zero and potentially carbon-negative operations.**

Resource Recovery of Nine Agricultural Waste Categories (Mass-Balance Analysis)

Chien Hsing Agriculture has mature patented technologies for processing nine categories of organic waste. In 2024, the Yunlin demonstration plant received and processed 31,450 metric tons of agricultural and organic waste (an average of more than 2,620 metric tons per month and a maximum of 3,700 metric tons in a single month):

- **Detailed codes for the nine input categories: R-0104 livestock and poultry manure (chicken, pig, and cattle manure; 48%); R-0114 fruit and vegetable residues (24%); R-2401 spent mushroom bags and rice straw (16%); R-0902 food-processing sludge and distillers' grains (12%); together with feathers (R-0110), plant-based residues (R-0120), broken eggs (R-0122), waste wood (R-0701), and household food waste (R-0106).**
- **Outputs: Annual production comprised 18,240 metric tons of Dagenwang-series bio-organic fertilizers (58.0%), 3,150 metric tons of probiotic fermented aquaculture feed ingredients (10.0%), and 1,200 metric tons of organic wood vinegar (3.8%). Harmless biological evaporation of moisture accounted for 7,360 metric tons (23.4%) and secondary non-hazardous impurities for 1,500 metric tons (4.8%). The plant-wide resource-recovery rate reached 95.2%.**

Using an estimated 0.38 metric ton of CO_2 per metric ton of organic waste incinerated conventionally, Chien Hsing Agriculture helped Taiwan avoid 11,951 metric tons of CO_2 emissions in 2024.

▸ Chien Hsing Agriculture 2024 Mass-Balance Table for Resource Recovery of Nine Waste Categories

Material-Flow Category	Reuse Code and Material Name	Weight Processed (metric tons/year)	Weight Share (%)	Environmental Benefit
Feedstock input	R-0104 livestock and poultry manure (chicken/pig/cattle)	15,100	48.0%	Avoids odors from open-air accumulation and methane emissions with high global-warming potential
Feedstock input	R-0114 fruit and vegetable residues and agricultural by-products	7,550	24.0%	Reduces landfill-leachate contamination and incinerator dioxin burdens
Feedstock input	R-2401 spent mushroom bags, rice straw, and orchard prunings	5,030	16.0%	Prevents PM2.5 air pollution from open burning by farmers
Feedstock input	R-0902 food-processing sludge, distillers' grains, food waste, etc.	3,770	12.0%	High-value circular utilization replacing conventional high-temperature incineration
Total input	Total organic waste received and processed	31,450	100.0%	Substantially reduces ecological burdens and government waste-collection pressure
Product output	Dagenwang-series bio-organic fertilizers	18,240	58.0%	Restores farmland fertility and substantially substitutes for chemical fertilizers
Product output	Probiotic fermented aquaculture feed ingredients (dual outputs)	3,150	10.0%	Substitutes for wild-caught fishmeal (SDG 14); probiotics support gut health

Product output	Natural wood vinegar and plant-protection materials	1,200	3.8%	Natural pest-repellent and antimicrobial inputs reducing chemical pesticide spraying
Process evaporation	Fermentation water vapor and bioconversion gases	7,360	23.4%	Rendered clean and harmless through three-stage wet scrubbing and biofiltration before discharge
Secondary impurities	Non-organic impurities (sand/gravel/woven fibers)	1,500	4.8%	Separated by gravity and air classification during pretreatment and transferred to qualified facilities
Total resource-recovery rate	Total reuse and recovery ratio	–	95.2%	Among the leading levels in Taiwan's agricultural circular-biotechnology sector

Boundary Odor-Abatement Projects and Third-Party Measurements (Results of NT$5.02 Million Investment)

To control ammonia (NH_3), hydrogen sulfide (H_2S), and volatile fatty acids commonly generated during organic fermentation, Chien Hsing Agriculture invested a cumulative NT$5.02 million in voluntary plant-wide odor-abatement projects from 2024 through 2026:

1. Enclosed slight-negative-pressure system: The entire plant is maintained at a constant −15 Pa, with dual high-speed wind-resistant interlocking doors at feedstock inlet and discharge points.

2. Three-stage hybrid purification system: Stage-one acidic chemical spray scrubber (99% ammonia removal); stage-two alkaline oxidation scrubber (oxidizing hydrogen sulfide and mercaptans); and stage-three active probiotic biofilter (advanced degradation of trace odors).

3. Measured results: Repeated blind sampling by an accredited independent testing institution (Tai Hsu Environmental Technology) showed that the boundary odor determination value fell sharply from 38 before improvement to 16, against a regulatory limit of 50—a 58% reduction. All 18 consecutive official inspections and spot checks were passed, and neighborhood complaints fell to zero.

▸ Quantified Comparison of Chien Hsing Agriculture’ s Boundary Odor Improvements (NT$5.02 Million Investment)

Test Item	Before Improvement (2024)	Latest Post-Improvement Result	Regulatory Limit	Improvement	Testing / Verification Body
Boundary odor concentration (dimensionless)	38	16	50	57.9% reduction	Tai Hsu Environmental Technology (accredited laboratory)
Ammonia in exhaust duct (NH_3, ppm)	14.2	0.45	50	96.8% removal	Continuous emissions monitoring system (CEMS)
Boundary hydrogen sulfide (H_2S, ppm)	0.08	<0.005 (not detected)	0.1	>93.7% removal	Periodic third-party test reports
Neighborhood complaints	3 per quarter	0 (zero for four consecutiv	0	Complaints reduced to zero	Complaint statistics of Yunlin

		e quarters)			County Environmental Protection Bureau

Zero Wastewater Discharge and Soil-Microbiome Carbon Sequestration

- **Zero-wastewater water cycle: The fermentation process is fully enclosed and requires little process-water replenishment. Vehicle and site washwater is treated through sedimentation, filtration, grit removal, and microbial purification, and 100% is reused for fermentation spray replenishment, achieving zero process-wastewater discharge.**
- **Microbial and biochar soil carbon sequestration: Long-term application of Dagenwang organic fertilizers improves soil aggregate structure and microbial diversity. Each hectare of farmland can increase net carbon sequestration by approximately 0.5–1.2 metric tons CO_2e per year, generating significant negative-carbon benefits through natural soil carbon sinks.**

Chapter 6: Social Inclusion (S): Labor and Human Rights, Local Engagement, and Farmer Empowerment

[Chapter Overview] 75% local Yunlin employment; employment of persons with disabilities above 10%; compensation 30%–50% above industry levels; bimonthly movie-ticket and book subsidies supporting "zero-waste knowledge"; 1,200 charity meals made from surplus-grade produce; and training for more than 1,000 farmers, increasing rice yields by 15% and pineapple yields by 20%.

Human Capital Structure and a Diverse, Equitable and Inclusive Workplace (DEI)

As of the end of 2024, Chien Hsing Agriculture had cumulatively created 80 employment opportunities and had 40 active employees. The Company remains firmly committed to local engagement and diversity, equity and inclusion (DEI):

- **Local Yunlin employment reaches 75%: Thirty local Yunlin residents and returning young people have been hired, supporting regional revitalization.**
- **Employment of persons with disabilities above statutory requirements (10%+): Packaging-line workflows have been redesigned and accessible assistive equipment provided. Persons with disabilities account for more than 10% of the workforce, far exceeding the statutory 3%, with equal pay for equal work.**
- **Compensation 30%–50% above industry levels: Entry-level operators receive more than the statutory minimum wage, together with high-temperature allowances, attendance bonuses, and employee profit sharing. Annual employee turnover is only 4.2%.**

▸ Chien Hsing Agriculture Workforce Structure and DEI Indicators (2024)

Workforce Indicator	Headcount / Statistics	Share (%)	Policy Targets and Benefits
Cumulative employment opportunities created	80 persons	–	Cumulative job creation over five years since establishment

Active full-time employees	40 persons	100.0%	All employed under full-time contracts; no dispatched workers
Local employees (Yunlin County)	30 persons	75.0%	Local hiring prioritized to support regional revitalization
Employees with disabilities	4+ persons	10.0%+	Above-quota employment of disadvantaged groups; accessible workplace provided
Female managers and employees	16 female employees / 5 female managers	40.0% / 45.5%	Female leadership role model; commitment to gender equality
Compensation premium over industry	30%–50% above industry levels	–	Entry-level compensation exceeds statutory minimum wage
Annual employee turnover	4.2%	–	Well below the manufacturing-sector average (12%)

A Caring Workplace: Zero-Waste Knowledge and Education Support for Employees' Children

Chairperson and Chief Sustainability Officer Vanessa Hu firmly believes that employees are the Company's greatest asset and has introduced thoughtful welfare measures:

- **Every two months, employees receive two movie tickets and one book. The internal book-exchange platform supports average reading of six books per employee per year. The Company has accumulated more than 100 books, which are donated for rural charitable causes after being read, creating a "zero-waste cycle of knowledge."**
- **Educational scholarships for employees' children: NT$500 in Eslite book vouchers per child in junior high school or below; NT$1,000 per child from grade 9 through grade 12; and NT$3,000 per university student. Children of foreign employees receive equal treatment.**

- **Occupational safety and health: A three-level permit system applies to confined-space work, together with interlocked safeguards for high-temperature equipment. The lost-time injury frequency rate (FR) is zero, maintaining a strong record of zero major occupational accidents and zero work-related fatalities.**

Farmer Empowerment: More than 1,000 Demonstration Farms Achieve 15% Higher Rice Yields and 20% Higher Pineapple Yields

Chien Hsing Agriculture's technical advisory team has provided on-site guidance to more than 1,000 farmers across Taiwan's agricultural regions:

- **Quantified yield evidence: Trial fields applying Dagenwang organic fertilizer and microbiome inoculants achieved average rice-yield increases of 15% and pineapple-yield increases of 20% (with average Brix sweetness increasing by 1.8 degrees). Disease incidence fell by 70%, and revenue increased by NT$65,000–NT$120,000 per hectare.**
- **One-stop subsidy application support: The Company proactively helps farmers access the Agriculture and Food Agency's Domestic Organic Fertilizer Promotion Subsidy (NT$2+2 per kilogram). In 2024, cumulative subsidies secured with Chien Hsing's assistance exceeded NT$18 million.**
- **Short-video outreach: Chief Sustainability Officer Vanessa Hu personally manages TikTok (@ocean14134), YouTube ("Chien Hsing Agriculture Chairperson x Vanessa"), and Facebook, using accessible language to remove barriers to agricultural technology.**

Social Contribution: 1,200 Charity Meals Made from Surplus-Grade Produce at Taichung Railway Station

- **Charity meal initiative using surplus-grade produce: Before the 2025 Lunar New Year (February 11–13), Chien Hsing Agriculture distributed 1,200 charity meals to people experiencing homelessness and disadvantaged older adults at Taichung Railway Station. The ingredients were high-quality agricultural products whose appearance did not meet market standards. Potentially wasted food was transformed into warm meals, extending the cycle "from farm to table, and onward to social care."**

- **Charitable restoration of acidified and salinized farmland: Each year, 2% of organic-fertilizer production capacity is allocated free of charge to restore farmland in Changhua and Yunlin damaged by excessive chemical fertilizer use. More than 35 hectares have been restored cumulatively.**

Chapter 7: Corporate Governance (G): Ethical Management, Internal Control and Compliance, and Supply-Chain Sustainability

[Chapter Overview] Disclosure of directors and supervisors, a professional diversity matrix, plans to appoint independent directors, an anti-corruption and ethics code, a confidential whistleblower mailbox, and a green supply-chain review mechanism.

Board Operations and Governance Diversity Policy

Chien Hsing Agriculture Technology Co., Ltd. currently has three directors and one supervisor. Vanessa Hu serves as Chairperson and concurrently as Chief Sustainability Officer. Board members have complementary expertise in biotechnology, mechanical engineering, business management, finance, and regulatory affairs.

The Board held three meetings in 2024, with an average director attendance rate of 100%. Agenda items included the capital increase to NT$80 million, implementation of the ISO 14064-1 GHG inventory, and the NT$5.02 million odor-abatement project. At the 2026 annual shareholders' meeting, the Company plans to appoint two independent directors with accounting and environmental expertise and to establish an Audit Committee and a Remuneration Committee, continuing its progression toward public-company governance standards.

▸ Current Directors and Supervisors of Chien Hsing Agriculture and Professional Diversity Matrix

Position	Name	Gender	Primary Areas of Expertise	Concurrent Position(s)	2024 Board Meeting Attendance
Chairperson and Chief Sustainability Officer	Vanessa Hu	Female	Business management / circular economy and brand strategy	Chairperson, Chien Hsing Agriculture	100% (3/3 meetings)
Director	Liu Chien-Feng	Male	Specialist in applied microbiological physics / patent inventor	Founder	100% (3/3 meetings)

Director	Wu Chih-Hsueh	Male	Operations representative / plant management	General Manager, Chien Hsing Agriculture	100% (3/3 meetings)
Supervisor	Tang Yu-Tung	Male	Human resources specialist / internal auditor	Senior human resources specialist	100% (attended 3/3 meetings as a non-voting participant)

Ethical Management, Anti-Corruption, and Whistleblower Protection

Chien Hsing Agriculture has established a Code of Ethical Management and Ethical Corporate Management Best Practice Principles. All suppliers and waste-transport contractors are required to sign an Integrity and Anti-Corruption Commitment. An independent reporting hotline (+886-5-5350-286) and mailbox (vanessa0738@gmail.com), under the direct control of the supervisor, strictly protect whistleblower identities. In 2024, the Company recorded no corruption offenses and no anticompetitive-behavior litigation, while employee ethics-awareness completion reached 100%.

Cross-Sector Green Partnerships: President Chain Store, Taiwan Fertilizer, and New Taipei City Contracts

- Green closed loop with Uni-President (7-ELEVEN), from surplus food to fresh food: Chien Hsing and President Chain Store have established a complete cycle of “surplus food → organic fertilizer → contract farmers → fresh food sold in convenience stores,” creating a mutually beneficial service model for all three parties.
- Public-private partnership with Taiwan Fertilizer Co. and Yunlin County Government: Patented high-speed fermentation and carbon-sequestration technologies support a national soil-microbiome and negative-carbon value chain.
- Cumulative New Taipei City Environmental Protection Department contracts exceeding NT$50 million: Daily processing of 40–60 metric tons of household food waste supports resource recovery for a metropolitan area of nearly four million people, demonstrating deep and trusted government collaboration.

Chapter 8: Economic Performance, Cost Management, and the Three-Track Business Model

[Chapter Overview] Three-year financial performance (2024 revenue of NT$225 million, net income of NT$31.95 million, and R&D equal to 8.5% of revenue); analysis of the three-track model comprising treatment fees, fertilizer sales, and AIoT advisory services; and unit economics generating gross profit of NT$4,200 per metric ton of agricultural waste (63.6% gross margin) through a negative-raw-material-cost advantage.

Financial Performance and Prudent Capital Expansion

Chien Hsing Agriculture has demonstrated an operating model in which the circular economy combines social benefit with strong profitability:

- Paid-in capital increased from NT$5 million in 2020 to NT$80 million in 2025 (against authorized capital of NT$100 million), representing a compound annual growth rate (CAGR) of 75%.
- In 2024, operating revenue reached NT$225 million (up 38.5%), the operating gross margin was 36.8%, and net income after tax was NT$31.95 million (net margin of 14.2%).
- R&D expenditure accounted for 8.5% of operating revenue, supporting continued investment in dominant extremophilic strain cultivation, conversion of single waste streams into both fertilizer and aquaculture feed, and soil carbon-sink applications.

▸ Chien Hsing Agriculture Three-Year Financial Performance Overview (2022 – 2024)

Financial Indicator (NT$ thousand)	FY2022	FY2023	FY2024	Three-Year CAGR
Total operating revenue	98,200	162,500	225,000	51.4%
Gross profit	33,880	58,500	82,800	56.3%
Gross profit margin (%)	34.5%	36.0%	36.8%	+2.3 percentage points
Net income after tax	11,500	21,800	31,950	66.7%
Net profit margin after tax (%)	11.7%	13.4%	14.2%	+2.5 percentage points

Paid-in capital	15,000	35,000	80,000	130.9%
R&D expenditure	8,200	13,800	19,125	52.7%
R&D expenditure as a percentage of revenue (%)	8.35%	8.49%	8.50%	Consistently above 8%

Three-Track Business Model and Unit Economics per Metric Ton

Chien Hsing Agriculture has moved beyond the conventional organic-fertilizer industry's dilemma of high raw-material costs and low margins by creating a three-track business model:

- Track 1—Waste treatment service fees: Livestock farms and food-processing plants pay collection and treatment fees of NT$1,500–NT$2,500 per metric ton, creating a negative-cost structure in which "customers pay us to collect our feedstock."
- Track 2—Sales of Dagenwang organic fertilizers: Products are included in the Agriculture and Food Agency's recommended list for its NT$2+2-per-kilogram subsidy, with subsidies for up to six metric tons per hectare, directly reducing farmers' purchase costs. Aquaculture feed produced through the dual-output model provides a second high-margin revenue source.
- Track 3—Smart-agriculture technical advisory and turnkey exports: Services include microclimate monitoring, soil testing, and customized fertilization advice, with turnkey technology exported to the Czech Republic, China, and Malaysia.

▸ Sensitivity Analysis Model for Economic Returns from Resource Recovery per Metric Ton of Agricultural Waste

Revenue and Cost Item	Amount per Metric Ton (NT$)	Share of Costs / Revenue	Analysis
[Revenue] Organic waste collection and treatment service fees	+ NT$2,000	30.3% of revenue	Cash inflow is generated upon waste receipt, securing a baseline revenue stream
[Revenue] Organic fertilizer sales (0.58 metric tons)	+ NT$3,800	57.6% of revenue	The Agriculture and Food Agency's NT$2+2 subsidy strongly

			supports farmers' willingness to purchase
[Revenue] High-value by-products: feed ingredients and wood vinegar	+ NT$800	12.1% of revenue	Innovative dual-use products from a single waste stream create a second growth curve
Total operating revenue (per metric ton processed)	+ NT$6,600	100.0%	2.2 times the revenue of the conventional fertilizer-only model
[Cost] Electricity and fermentation heat	- NT$450	18.8% of costs	Patented self-heating insulation substantially reduces purchased fuel expenditure
[Cost] Patented composite microbial cultures and biochemical additives	- NT$250	10.4% of costs	In-house microbial cultivation costs only one-third of purchased cultures
[Cost] Labor and on-site operating expenses	- NT$320	13.3% of costs	Automated continuous reactors substantially reduce manual handling requirements
[Cost] Equipment depreciation, plant facilities, and environmental maintenance	- NT$380	15.8% of costs	Includes depreciation and consumable replacement for the NT$5.02 million odor-control project
[Cost] Logistics, transportation, and packaging materials	- NT$1,000	41.7% of costs	Freight costs are reduced through an in-house collection fleet and regional consolidation and transfer centers
Total operating costs (per metric ton processed)	- NT$2,400	100.0%	Raw material cost is zero; treatment fees fully cover raw material acquisition
Gross profit per metric ton processed	+ NT$4,200	Gross margin: 63.6%	A scalable and cycle-resilient circular-economy business model

Chapter 9: TCFD Climate-Related Financial Disclosures: Governance, Strategy, Risk Management, and Quantified Scenarios

[Chapter Overview] Climate scenario analysis under 1.5°C and 4°C pathways using the TCFD framework; quantified financial impact of Taiwan's carbon fee (NT$300–NT$1,000 per metric ton); and adaptation strategies addressing physical flood risks and transition-related green opportunities.

The Four TCFD Pillars and Governance Operations

Chien Hsing Agriculture has adopted the TCFD framework. For governance, the Board oversees the climate transition and the Chairperson, serving concurrently as CSO, directly leads implementation. For strategy, physical and transition risks are analyzed over the short, medium, and long term. For risk management, climate considerations are integrated into ERP procurement and production scheduling. For metrics and targets, ISO 14064-1 data anchor the goals of a 30% reduction by 2030 and net zero by 2040.

Climate Scenario Analysis and Quantified Financial Impact of Carbon Fees

Based on 2024 emissions of 348.274 metric tons CO_2e, the financial cost impact of Taiwan's carbon fee is estimated as follows:

▸ Sensitivity Model for the Impact of Taiwan's Carbon-Fee Policy on Chien Hsing Agriculture's Operating Costs (Based on 2024 Emissions of 348.27 Metric Tons)

Carbon Fee Scenario	Carbon Fee per Metric Ton	Annual Plant-Wide Carbon Fee (NT$)	Share of 2024 Revenue	Share of Net Income After Tax	Response Strategy and Resilience Assessment
Initial rate	NT$300 / metric ton	NT$104,482	0.046%	0.33%	Minimal impact; fully offset through LED energy savings and heat recovery

Medium-term adjusted rate	NT$500 / metric ton	NT$174,137	0.077%	0.55%	Install rooftop solar at the Yunlin Science and Technology Industrial Park demonstration plant for self-consumption, reducing emissions from purchased electricity
Long-term rate aligned with the EU	NT$1,000 / metric ton	NT$348,274	0.155%	1.09%	Deploy an electric transport fleet and reduce total plant emissions below 200 metric tons
Potential carbon-credit revenue	NT$800 offset credit per metric ton of biochar	+ NT$1,840,000	+0.818% revenue uplift	+5.76% net income uplift	Register voluntary reduction credits for soil carbon sequestration using in-house biochar and monetize them as carbon assets

Note on the model: Calculations use total inventoried emissions of 348.274 metric tons CO_2e in 2024 and do not deduct subsequent decarbonization measures. Biochar revenue assumes annual production of 1,000 metric tons.

Chapter 10: Detailed Alignment with the United Nations Sustainable Development Goals (SDGs)

[Chapter Overview] Chien Hsing Agriculture Technology's core operations are closely aligned with ten UN Sustainable Development Goals. This chapter discloses quantified achievements and future commitment indicators.

Chien Hsing Agriculture's SDG Contribution Map and Quantified Results Matrix

Chien Hsing Agriculture focuses on ten United Nations Sustainable Development Goals (SDGs), with the following results:

▸ Comprehensive Results Table for Chien Hsing Agriculture Technology' s Alignment with Ten UN Sustainable Development Goals (SDGs)

SDG	Goal and Relevance	Chien Hsing Agriculture's Core Actions	Quantified Outcomes, 2024–2025
SDG 2	Zero Hunger and Sustainable Agriculture	Produce Dagenwang organic fertilizer, restore soil fertility, and advise farmers on yield improvement and disease prevention	18,240 metric tons of organic fertilizer produced annually; 1,000+ farming households advised; rice yields increased 15% and pineapple yields 20%
SDG 6	Clean Water and Sanitation	Enclosed treatment of livestock and poultry manure; 100% recycling and filtration of process water with zero discharge	Prevented 15,100 metric tons of high-strength livestock and poultry manure from entering rivers; zero wastewater discharge from the plant
SDG 8	Decent Work and Economic Growth	Create well-paid local jobs, provide equitable employment for persons with disabilities, and maintain zero major occupational accidents	80 jobs created cumulatively; 75% local employees; persons with disabilities 10%+; wages 30–50% above industry levels
SDG 9	Industry, Innovation	Develop the patented three-stage rapid fermentation	Two invention patents obtained; R&D equal to 8.5% of revenue; four patents

	and Infrastructure	technology with capability for turnkey plant export	across Taiwan, China, and Hong Kong
SDG 11	Sustainable Cities and Communities	Resolve rural livestock and poultry manure odors and rice-straw burning, improving the quality of life around the plant	NT$5.02 million invested in odor control; odor concentration reduced to 16 (58% improvement); 18 consecutive compliant tests
SDG 12	Responsible Consumption and Production	Implement full circularity across nine agricultural waste categories, achieving dual use and closed-loop value recovery	31,450 metric tons of organic waste treated annually; resource recovery rate of 95.2%
SDG 13	Climate Action	Complete an ISO 14064-1 GHG inventory; target a 30% reduction by 2030 and net zero by 2040	Avoided 11,951 metric tons of incineration-related carbon emissions for society; increased soil carbon sequestration by 0.5–1.2 metric tons per hectare annually
SDG 14	Life Below Water	Develop dual-use fermented aquaculture feed to replace wild-caught fishmeal and antibiotics	Reduced overfishing for fishmeal production and helped protect marine biodiversity
SDG 15	Life on Land	Eliminate dependence on chemical pesticides and restore soil microbial communities and fertility	100% replacement of chemical pesticides on demonstration farms; charitable restoration of 35 hectares of acidified farmland
SDG 17	Partnerships for the Goals	Partner with President Chain Store and Taiwan Fertilizer through PPPs; expand into the Czech Republic, China, and Malaysia	Advanced international circular-agriculture technology transfer and diverse global partnerships

Special Feature 1: Comprehensive Guide to Taiwan Government Subsidies and Incentive Programs (Expert Proposal-Planning Guide)

[Chapter Overview] Written by proposal-planning experts: an in-depth analysis of application strategies and key approval factors for the Agriculture and Food Agency's NT$2+2 organic-fertilizer subsidy, the Resource Circulation Administration's R&D demonstration program, the Ministry of Economic Affairs' industrial innovation/SBIR low-carbon manufacturing programs, and preferential financing from the National Development Fund.

Policy Subsidy Landscape across Four Major Government Ministries and Agencies

Chien Hsing Agriculture Technology closely aligns its projects with national policy incentives. These include the Ministry of Agriculture's Agriculture and Food Agency (NT$2+2 per kilogram organic-fertilizer subsidy, up to six metric tons per hectare); the Ministry of Environment's Resource Circulation Administration (demonstration subsidies of up to NT$10–20 million); the Ministry of Economic Affairs' Industrial Development Administration and Small and Medium Enterprise Administration (SBIR/industrial innovation low-carbon projects of NT$5–30 million); and the National Development Fund and Agricultural Bank (interest subsidies of 1.0%–1.5% for green and low-carbon preferential loans).

▸ Chien Hsing Agriculture Technology's Alignment with Subsidy and Incentive Programs across Four Government Ministries and Agencies

Competent Ministry / Agency	Subsidy or Incentive Program	Maximum Subsidy / Subsidy Ratio	Chien Hsing Product / Project	Key Application Requirements and Evaluation Strengths	Current Status
Agriculture and Food Agency, Ministry of Agriculture	Domestic Organic Fertilizer Promotion Subsidy	NT$2+2 per kg (NT$2 central + NT$2 local; up to 6	Flagship product: Dagenwang No. 1 bio-organic fertilizer	No heavy metals detected in sampling; commercial fertilizer registration;	Included on the approved recommendation list (recurring claims)

		metric tons per hectare)		demonstrated farmer repurchase rate	
Resource Circulation Administration, Ministry of Environment	R&D and Demonstration Subsidy for Organic Waste Resource Circulation and Reuse Technologies	Up to NT$10–20 million (subsidy ratio up to 50%)	Demonstration line for high-temperature rapid fermentation composite cultures and dual-use waste technology	Material-flow closed-loop rate >90%; near-zero odor and air-pollutant emissions; industry–academia–research consortium	Application under preparation for FY2025
Industrial Development Administration / Small and Medium Enterprise Administration, Ministry of Economic Affairs	SBIR / A+ Industrial Innovation R&D Program (Low-Carbon Circularity)	Up to NT$5–30 million (non-repayable grant)	In-house development of an AIoT-enabled continuous fermentation reactor for the Yunlin Science and Technology Industrial Park demonstration plant	Invention patent I841970; >80% domestically manufactured equipment; export potential	Planned for inclusion in the Q4 2025 application round
National Development Fund / Agricultural Bank of Taiwan	Preferential Financing for Green and Low-Carbon Transition (Interest Subsidy)	Financing of up to NT$100–300 million (interest subsidy of 1.0%–1.5%)	Syndicated financing for green and low-carbon equipment and solar self-generation and self-consumption	Alignment with Green Finance Action Plan 3.0; ISO 14064 GHG inventory report; ESG awards	Credit review and assessment initiated by the lead bank

Expert Proposal Strategies: Four Keys to Passing Program Reviews

1. Use quantified data rather than adjectives: Peak fermentation temperature exceeds 100°C; Salmonella and E. coli removal reaches 100%; and the odor value fell from 38 to 16 (a 58% improvement).
2. Align closely with the Executive Yuan’s 2050 Net-Zero Key Strategies: Directly address “Strategy 8: Resource Circularity and Zero Waste” and “Strategy 6: Natural Carbon Sinks.”
3. Prepare budgets in accordance with rigorous accounting and audit logic: Self-funded contributions are supported by Chien Hsing’s NT$80 million paid-in capital, with reasonable equipment depreciation and labor-hour allocations.
4. Maximize spillover benefits: Emphasize fertilizer savings and higher income for more than 1,000 farmers nationwide, resolution of New Taipei City’s daily food-waste treatment challenge, and technology exports to the Czech Republic, demonstrating substantial public value.

Special Feature 2: Growth Strategy and Four Key Driver Models (Data, Psychology, Management, and Referral)

[Chapter Overview] Integrating growth hacking and behavioral psychology to analyze the decision-making psychology of farmers and livestock-farm operators; building a 1–10–100 referral-marketing network through demonstration farms; and applying disciplined project management to technology R&D and international exports.

Framework for Applying Four Key Capabilities to Circular Agriculture

1. Data insight and analysis: Combined gross profit per metric ton of agricultural waste reaches NT$4,200 (63.6% gross margin). A carbon fee of NT$500 per metric ton represents only 0.077% of revenue, demonstrating strong resilience to inflation and carbon pricing.
2. User psychology and communication: Farmers fear being misled or overcharged, so communication focuses on “one-stop assistance with the Agriculture and Food Agency’s NT$2+2 subsidy, cutting costs in half” and “pineapple sweetness reaching 18 degrees Brix.” Livestock-farm operators fear penalties, so we present our NT$50 million New Taipei City contracts and lawful waste-manifest documentation.
3. Project management and execution: Gantt charts govern process upgrades, heat-recovery projects, and international collaborations. A three-level confined-space permit system has maintained a lost-time injury frequency rate (FR) of zero for consecutive years.
4. Content planning and referral marketing: The “1–10–100 field referral growth flywheel” comprises one award-winning production-and-marketing group leader’s benchmark farm, followed by blind field tests at harvest by ten core group members, and then group purchasing and one-stop subsidy support for 100 farms. The referral rate from existing customers reaches 68%.

Appendix 1: Complete GRI Standards 2021 Content Index

[Chapter Overview] A complete cross-reference to core disclosures under GRI 2 General Disclosures, the GRI 200 economic series, GRI 300 environmental series, and GRI 400 social series, in accordance with the Global Sustainability Standards Board's latest 2021 Standards.

GRI 2: General Disclosures 2021

This Report has been prepared with reference to GRI Standards 2021. The content index is presented below:

▸ GRI 2: General Disclosures 2021 Content Index

GRI Disclosure	Disclosure Title	Corresponding Report Section and Description	Disclosure Status
GRI 2-1	Organizational details	Chapter 2, Section 2.1 (Uniform No. 83269951; No. 11, Ke Gong 12th Road, Douliu; paid-in capital of NT$80 million)	Fully disclosed
GRI 2-2	Entities included in the organization's sustainability reporting	Chapter 2, Section 2.1; Appendix III (headquarters, Yunlin Science and Technology Industrial Park demonstration plant, and administrative office)	Fully disclosed
GRI 2-3	Reporting period, frequency and contact point	Appendix III (Vanessa Hu; +886-5-5350-286; vanessa0738@gmail.com)	Fully disclosed
GRI 2-6	Activities, value chain and other business relationships	Chapter 1, Section 1.3; Chapter 2, Section 2.2; Chapter 8, Section 8.2 (three-track business model)	Fully disclosed
GRI 2-7	Employees	Chapter 6, Section 6.1 (40 employees; 75% local employment; persons with disabilities 10%+)	Fully disclosed

GRI 2-9	Governance structure and composition	Chapter 3, Section 3.1; Chapter 7, Section 7.1 (Board structure; Vanessa Hu concurrently serves as Chief Sustainability Officer)	Fully disclosed
GRI 2-10	Nomination and selection of the highest governance body	Chapter 7, Section 7.1 (director and supervisor backgrounds; plan to appoint two independent directors in 2026)	Fully disclosed
GRI 2-12	Role of the highest governance body in overseeing the management of impacts	Chapter 3, Section 3.1 (Chairperson and Chief Sustainability Officer Vanessa Hu personally chairs the ESG Committee)	Fully disclosed
GRI 2-19	Remuneration policies	Chapter 3, Section 3.2; Chapter 6, Section 6.1 (30% of senior management remuneration linked to ESG KPIs)	Fully disclosed
GRI 2-22	Statement on sustainable development strategy	Chapter 1, Statement of Commitment by the Chairperson and Chief Sustainability Officer (personally authored by Vanessa Hu)	Fully disclosed
GRI 2-27	Compliance with laws and regulations	Chapter 1, Section 1.4; Chapter 5, Section 5.5 (transparent disclosure of the 2024 odor penalty and NT$5.02 million improvement project achieving compliance)	Fully disclosed
GRI 2-29	Approach to stakeholder engagement	Chapter 4, Section 4.1 (identification of seven stakeholder groups, communication channels, and outcomes)	Fully disclosed

GRI Topic-Specific Disclosures: Economic, Environmental, and Social

The topic-standard disclosure index is presented below:

▸ GRI Topic-Specific Disclosure Index: Economic, Environmental, and Social

GRI Disclosure	Topic	Corresponding Report Section and Quantified Outcomes	Disclosure Status
GRI 201-1	Direct economic value generated and distributed	Chapter 8, Section 8.1 (2024 revenue of NT$225 million; gross margin of 36.8%; net income of NT$31.95 million)	Fully disclosed
GRI 201-2	Financial implications and other risks and opportunities due to climate change	Chapter 9, Section 9.2 (TCFD climate scenarios and quantified carbon-fee sensitivity analysis)	Fully disclosed
GRI 205-2	Communication and training about anti-corruption policies and procedures	Chapter 7, Section 7.2 (Ethical Corporate Management Best Practice Principles; 100% employee communication; whistleblower mailbox)	Fully disclosed
GRI 302-1	Energy consumption within the organization	Chapter 5, Section 5.2 (purchased electricity of 390,036 kWh; LPG of 35,160 kg)	Fully disclosed
GRI 303-1	Interactions with water as a shared resource	Chapter 5, Section 5.6 (100% of wash water settled, filtered, and returned for fermentation makeup; zero process discharge)	Fully disclosed
GRI 305-1	Direct (Scope 1) GHG emissions	Chapter 5, Section 5.2 (163.397 metric tons CO_2e in 2024, representing 46.90%)	Fully disclosed
GRI 305-2	Energy indirect (Scope 2) GHG emissions	Chapter 5, Section 5.2 (184.877 metric tons CO_2e in 2024, representing 53.10%)	Fully disclosed
GRI 305-5	Reduction of GHG emissions	Chapter 5, Section 5.3 (pathway to a 15% reduction by 2027, 30% by 2030, and net zero by 2040)	Fully disclosed
GRI 306-1	Waste generation and significant	Chapter 5, Section 5.4 (31,450 metric tons of agricultural waste	Fully disclosed

	waste-related impacts	treated annually; mass balance across nine categories)	
GRI 306-2	Management of significant waste-related impacts	Chapter 5, Section 5.4 (dual-use conversion into fertilizer and feed; recovery rate of 95.2%)	Fully disclosed
GRI 401-1	New employee hires and employee turnover	Chapter 6, Section 6.1 (annual employee turnover of 4.2%, well below the industry average)	Fully disclosed
GRI 403-1	Occupational health and safety management system	Chapter 6, Section 6.2 (three-level permit system for confined spaces; disabling injury frequency rate FR = 0)	Fully disclosed
GRI 405-1	Diversity of governance bodies and employees	Chapter 6, Section 6.1; Chapter 7, Section 7.1 (women represent 45.5% of managers; persons with disabilities 10%+ of employees)	Fully disclosed
GRI 413-1	Operations with local community engagement, impact assessments, and development programs	Chapter 5, Section 5.5; Chapter 6, Section 6.4 (NT$5.02 million invested in odor control; 1,200 charity meals distributed)	Fully disclosed
GRI 416-1	Assessment of the health and safety impacts of product and service categories	Chapter 2, Section 2.1; Chapter 8, Section 8.2 (Dagenwang passed heavy-metal testing and is recommended by the Agriculture and Food Agency)	Fully disclosed

Appendix 2: SASB Standards Content Index (Agricultural Products, FB-AG)

[Chapter Overview] Disclosures on greenhouse gas emissions, air quality, water resources, waste, and food safety under the SASB Agricultural Products (FB-AG) Standard.

Quantified Disclosure Index for SASB Metrics

The SASB Agricultural Products (FB-AG) sustainability accounting metrics index is presented below:

▸ SASB Agricultural Products (FB-AG) Sustainability Accounting Metrics Index

Topic	Metric Code	Accounting Metric	Unit of Measure	Chien Hsing Agriculture 2024 Performance	Corresponding Report Section
GHG Emissions	FB-AG-110a.1	Gross global Scope 1 emissions	Metric tons CO_2e	163.397 tCO_2e	Chapter 5, Section 5.2 (Table 5-1)
GHG Emissions	FB-AG-110a.2	Gross global Scope 2 emissions	Metric tons CO_2e	184.877 tCO_2e	Chapter 5, Section 5.2 (Table 5-1)
Air Quality	FB-AG-120a.1	Air-pollutant emissions (odor / ammonia)	Concentration compliance ratio	Boundary odor concentration of 16 (regulatory limit: 50)	Chapter 5, Section 5.5 (Table 5-4)
Water Management	FB-AG-140a.1	Total process water consumption and water withdrawn in regions with	Thousand cubic meters (m^3)	Total plant water withdrawal of 3.82 thousand m^3 (zero process discharge)	Chapter 5, Section 5.6

		high water stress			
Waste Management	FB-AG-150a.1	Total waste generated	Metric tons	1,500 metric tons of secondary harmless impurity residues	Chapter 5, Section 5.4 (Mass Balance Table)
Waste Management	FB-AG-150a.2	Waste reused and resource recovery rate	Percentage (%)	Resource recovery rate of 95.2%	Chapter 5, Section 5.4 (Mass Balance Table)
Product Safety and Quality	FB-AG-250a.1	Compliance rate for food safety and fertilizer quality certification standards	Percentage (%)	100% compliance for brands registered and recommended by the Agriculture and Food Agency	Chapter 2, Section 2.1; Chapter 8, Section 8.2
Occupational Health and Safety	FB-AG-320a.1	Injury rate (TRIR / LTIFR)	Rate (incidents per million hours worked)	TRIR = 0 (zero major occupational accidents)	Chapter 6, Section 6.2

Appendix 3: Reporting Basis, Boundary, and Contact Information

[Chapter Overview] Explanation of the reporting boundary and data methodology; planning for ISO 14064-1 verification and AA1000 assurance; and official service hotline and email.

Reporting Statement and Verification Schedule

- Reporting basis: Prepared with reference to GRI Standards 2021 and integrating the SASB Agricultural Products Standard (FB-AG), the TCFD climate framework, ISO 14064-1:2018, and the Executive Yuan's 2050 Net-Zero Key Strategies.
- Reporting period and boundary: January 1 to December 31, 2024, including the latest developments in 2025. The reporting boundary covers the headquarters, Yunlin Science and Technology Industrial Park demonstration plant (1,500 ping), and Yunlin Administrative Office of Chien Hsing Agriculture Technology Co., Ltd.
- Third-party verification plan: Organizational GHG inventory guidance was completed in July 2025. An international third-party verification body (SGS or BSI) is expected to conduct formal external verification under ISO 14064-1:2018 in the first half of 2026. The Company also plans to seek AA1000AS assurance (Type 2, moderate assurance) for this Report in 2026.

Stakeholder Feedback and Contact Information

If you have any suggestions or partnership inquiries regarding Chien Hsing Agriculture Technology Co., Ltd.'s 2025 ESG Sustainability Report, or wish to request supporting guidance materials, please contact us at any time:

- Contact: Sustainable Development Committee (ESG Office), Chien Hsing Agriculture Technology Co., Ltd.
- Representative: Vanessa Hu, Chairperson and Chief Sustainability Officer
- Registered office and factory address: No. 11, Kegong 12th Rd., Huxi Vil., Douliu City, Yunlin County (Yunlin Science and Technology Industrial Park)
- **Official service hotline: +886-5-5350-286**

- **Email: vanessa0738@gmail.com**
- Official website: https://www.chienhsing.com/

We sincerely thank you for your longstanding support of and care for circular agriculture and green, sustainable development in Taiwan.