

ECOVE Environment Corporation

Sustainability Report

2021



Every Resource Counts

ECOVE

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Message from the Management



J. J. Liao

J.J.Liao

ECOVE Environment Corp.
Chairman

ECOVE's Practices of Circular Economy towards a Net-Zero Future

The global outbreak of the COVID-19 pandemic at the end of 2019 has continued to exert a severe impact on the industries and economies around the world, and has prompted global enterprises to place greater emphasis on sustainable development. The key to sustainable business is to commence a low and zero carbon transformation as early as possible. Upholding the philosophy of "Every Resource Counts" with the development principle of circular economy, ECOVE continues to cultivate three major business areas regarding "incineration and electromechanical maintenance maintenance, recycling, and renewable energy " through four brand associations: "Resource Recycling Efficiency", "Intelligent Systems and Data Management", "Participation in Environmental Policies and Issues", and "Community Cooperation and Contribution" in an attempt to improve the circular efficiency of every resource and create sustainable corporate value through proactive actions.

Reinforce pandemic prevention measures to enable uninterrupted operations

The businesses that ECOVE is engaged in are closely related to people's livelihood, and daily operations cannot afford to be stopped. Since the outbreak of the COVID-19 pandemic, our colleagues have shouldered heavy responsibilities and embarked on a long road. Families of the colleagues have also provided a great deal of support for ECOVE. With their support and understanding, we are able to devote ourselves against the pandemic without any worries.

With insight into crisis management and the ability to handle emergency situations on a regular basis, ECOVE immediately set up a global pandemic prevention command center, established a pandemic prevention organization and division of labor, formulated a robust pandemic prevention decision-making and governance mechanism with the personal participation of senior executives, established a pandemic prevention information platform, drafted and activated the Business Continuity Plan (BCP), invited employees exposed to major risks to work from home, provided free home quick screening, arranged employee travel management and health management through an intelligent APP, and continuously conducted PDCA (Plan-Do-Check-Act) to compile pandemic developments at any time, all for the purpose of safeguarding the health of employees and keeping ECOVE's operations uninterrupted.

Every Resource Counts Expansion of Three Business Segments

ECOVE has had more than two decades of investment and management experience in the field of incineration and electromechanical maintenance. We are also the first Taiwanese company to expand overseas, pioneering the business supervision of incineration plants in mainland China. ECOVE has boosted operation efficiency effectively through the independent R&D of Intelligent Solutions, leveraging on big data, while integrating in-house developed patented technologies. In recent years, ECOVE has been able to leverage its experience in electromechanical integration of



incineration plant operations to enter the field of electromechanical maintenance services of high-tech plants, and has obtained international-level utility maintenance cases for high-tech plants, providing effective and efficient facility management and maintenance work for air conditioning, fire fighting, water, air and electrical systems, etc. Through ECOVE's plant management, the gasification and instrumentation systems are always under good control, allowing high-tech plants to operate and produce without worries.

As governments around the world place more emphasis on carbon reduction, diversified energy supplies are becoming mainstream, with the demand for green power increasing year by year, aiming to promote energy transformation and gradually reach the long-term goal of net zero carbon. In the field of renewable energy, ECOVE has extended from incineration to solar power and biomass power generation. Among them, ECOVE has expanded its solar power track record from Taiwan to the U.S., and has achieved the "nation's largest" installation volume for a single site, such as a rehabilitation landfill or a rail transit site. ECOVE's experience and track record in intelligent maintenance management by introducing infrared aerial inspection equipment and AI intelligent monitoring equipment to enhance maintenance efficiency and effectiveness has also won the trust of Japanese enterprises for the maintenance of the world's largest water-based solar farm with a total installation capacity of 180MW located in Zhangbin Industrial Park. With the global demand for renewable energy on the rise, ECOVE has been selling green power through its own solar power plant and successfully sold green power to its subsidiary, ECOVE Solvent Recycling Corp., in 2021 to establish practical experience in green power trading.

In the field of recycling, ECOVE always adopts the principle of upgrade and regeneration to improve the purity and value of resources and to effectively save water and energy resources consumption in natural resource extraction and processing processes. For example, to meet the needs of the growing high-tech industry, our waste isopropyl alcohol (IPA) solvent recycling business has successfully de-watered and concentrated low concentration waste IPA to 99.5% industrial grade, processing approximately 11,000 tons of waste IPA in 2021 and reusing it to produce approximately 1,500 metric tons of industrial grade IPA back into the market supply chain. In the field of water reuse, ECOVE has actively invested in its development and utilization, and introduced intelligent applications. Following the operation and maintenance of the Linkou Water Resource Center and the equipment upgrade of the Kaohsiung Zhongzhou Sewage Treatment Plant, ECOVE will continue to expand its business and strive for the EPC turnkey construction and subsequent operation and maintenance work with the integrated efficiency of the CTCI Co., Ltd. to explore more business opportunities for water reuse.

Total Participation of CSR and ESG Practices

The ESG (Environment, Social and Governance) factor has been embedded in our DNA since the first day of ECOVE's establishment. In terms of corporate governance, ECOVE continues to strengthen information transparency, improve its operational structure, protect shareholders' rights and interests, and proactively enhance its corporate governance system. On the other hand, we have established a Sustainable Development Committee to integrate resources across departments to promote sustainability issues and move towards a vision of sustainability.

With respect to environment, ECOVE became the first in Taiwan from the environmental resource-related industry to pass the "TCFD - Task Force on Climate-related Financial Disclosures Compliance" audit by international standards, and was awarded the highest grade of "Excellence". ECOVE's four major management frameworks - governance, strategy, risk management, and targets and goals - enable it to fully assess the risks and opportunities that climate change may bring to its business operations, formulate strategies to address them, and proactively lay out its renewable energy and recycling business. In addition, for the projects under implementation, we are working on the process side and the management side to reduce carbon emissions through equipment renewal, process improvement and energy-saving management. ECOVE continues to improve the management strategy of climate risks and opportunities in accordance with the PDCA cycle.

Regarding social aspect, as a corporate citizen, ECOVE has made long-term commitments to social participation topics that are relevant to its operations besides pursuing professional progress. The three main themes that have been selected include "community activities connected to operations," "long-term community building" and "achieving common good with corporate volunteers" to encourage employees to invest in joyful and meaningful volunteer activities, contribute to the society with practical actions and achieve work-life balance.

Circular Economy Practitioner Creates Sustainable Corporate Value

Having devoted time and effort to the Taiwanese market for many years, ECOVE considers ourselves to be a practitioner of circular economy, and has always held true to our corporate culture of "professionalism, integrity, teamwork, innovation" to provide optimized "resource cycling" efficiency" services through advanced technical integrations. Moreover, the Company remains dedicated to local social development as well as fulfilling our promise to become "the most reliable" brand. Moreover, ECOVE has developed a blueprint for sustainability through evaluating ESG and problems such as climate change based on its core capabilities and brand association. ECOVE expects to solve social and environmental problems through business activities, as well as caring for the environment and society through corporate operations to combine business with vision. The goal is creating value based on corporate sustainability on top of output value with company-wide CSR participation and continuous investment in the ESG field.

In face of global warming, the road to net zero requires global cooperation to achieve this goal. ECOVE regards sustainability as its mission, and with long-term planning and management, we are committed to continuously expanding our achievements and achieving global sustainability through a diversified business layout. With the vision of being the "most reliable leader in resource recycling", ECOVE will continue to work hard to achieve a circular economy and move towards a net-zero vision.



About ECOVE

GRI 102-1~7

ECOVE Environment Corp. (hereinafter referred to as "ECOVE" or the Company) is a subsidiary of CTCI - an international EPC turnkey company, and is also the leader for CTCI's Group Resource Cycling Business. Striving to improve the reuse of resources, ECOVE provides professional investment and management services for industries related to resource cycling. Growth is anchored on the development and management of renewable energy, renewable materials, and recycled water among other circular economies, and efforts are put in three major areas of incineration and electrical and mechanical maintenance, recycling, and renewable energy.

Ecove Environment Corp.	
Established	1999
Stock Code	6803
Capital	NT\$697.1 million
2021 Consolidated Revenue	NT\$5.96 billion
Number of Affiliates	14 (10 domestic, 4 foreign)
Total employees at year-end 2021	891 persons
Location of headquarters	12F., No. 16, Fushan Rd., Beitou Dist., Taipei City
Company website	http://www.ecove.com
2021 Total Market Capitalization <small>(Calculated based on year-end share price in each year)</small>	NT\$16,287 million

ECOVE's scope of business includes "investment and management", "operations and management", and "technical and consulting services", where clients include the public sectors and private enterprises from the Greater China region, Southeast Asia, India, and the United States. Through our 14 reinvestment companies, each of which plays different roles in the development of circular economy business and augments one another, we provide a comprehensive range of professional environmental protection services and develop a professional circular economy team in Taiwan, Macao, mainland China, Southeast Asia, India, and the United States.

Scope of Business and Services





Company Structure and Global Key Locations

ECOVE
ECOVE Environment Corporation



ECOVE WEC

100%



ECOVE MEC

75%



EVER ECOVE Corporation

5%



ECOVE ESC

100%



ECOVE WMC

100%



ECOVE Solar Energy Corporation

100%



ECOVE Solvent Recycling Corporation

90%



BoReTech Co., Limited (Cayman)

20%

ECOVE ESC
100%

ECOVE ECC
100%

SINO GAL
30%

Radium ECOVE Corporation
30%

ECOVE SPC
100%

Lumberton PVPP
100%

Incineration and electromechanical maintenance maintenance

Renewable energy

Recycling and reuse

- ECOVE Environment Corp.
- ECOVE Environment Services Corp.
- ECOVE Wujih Energy Corp.
- ECOVE Waste Management Corp.
- ECOVE Miaoli Energy Corp.
- ECOVE Solar Energy Corp.
- ECOVE Solvent Recycling Corp.
- EVER ECOVE Corp.
- (Companies in order of year of establishment)
- ECOVE Environment Consulting Corp. (Shanghai, China)
- BoReTech Co., Ltd. (Zhejiang, China)
- SINO GAL - Waste Services Co., Ltd. (Macao, China)
- Lumberton PVPP (New Jersey, the USA.)
- Radium ECOVE Corp.
- ECOVE Solar Power Corp.
- ECOVE Gangshan Energy Corp.



Sustainability Performance



Environmental

15 billion kWh

Total renewable energy generation

Social

16 years

Tracking the blood dioxin of employees - 16 consecutive years (The test result is lower compared with the blood dioxin concentration of the general population)

Corporate governance

(By chronological order)



Ministry of Labor

Industry Benchmark Award at National Occupational Safety Awards



The Executive Yuan

National Sustainable Development Awards



27 million metric tons

Serving over 380 clients , annual waste removal volume

No.1

Excellence in the energy-from-waste plant evaluation by the Environmental Protection Administration - First Place - Keelung Plant

2,790 million metric tons

Total annual treatment capacity of wastewater plants

No.1

ECOVE Solvent Recycling Corp., the subsidiary of the Company, pioneered in Taiwan with both certificates of international circular economy and carbon neutrality

5 plants

Attestation by the Environmental Protection Administration for five environmental education facilities - Keelung Plant, Miaoli Plant, Houli Plant, Tainan Plant, and Tainan Science Park Plant

8,000 people

Active environmental education regarding the "One Factory and One Footprint, Sustainable Environmental Education" project, with over 8,000 participants of teachers and students

2,000 hours

Total volunteer hours

50%

Arranged employee stock ownership trust with self-withdrawn bonus



The Ministry of Economic Affairs

Top Solar System Awards for Excellent Solar Power



The Ministry of Economic Affairs

Won the Water Conservation Improvement Award - Excellence Award



Environmental Protection Administration

Won the Outstanding Enterprise for Resource Recycling - 2 Stars



Environmental Protection Administration

Won the Low Carbon Product Award- Carbon Reduction Label



Environmental Protection Administration

The 3rd National Enterprise Environmental Protection Award - Securing the Honorary Environmental Protection Enterprise Award, Gold Award and Silver Award



Financial Supervisory Commission (FSC)

Top 5% among OTC-listed Companies for the Consecutive 1st to 8th Sessions of Corporate Governance Evaluation

Note: 2015 ~ 2022



Our Vision and Mission

As a practitioner of resource cycling, ECOVE has always strived to expand the impact of global sustainability through a lifelong mission in resource cycling. We continue with our vision of "The most reliable provider of industry-leading 'resource cycling' services", and with "advanced technical integration applications" and "'Resource cycling' efficiency" as our mission, with the brand ethos of "Every Resource Counts" underpinning our operational model and thinking.



Vision

The most reliable provider of industry-leading "resource cycling" services

Mission

Advancing technologies and integrating them for application and optimizing resource cycling efficiency

Brand Associations



ECOVE's Corporate Culture and Action Plan

Having devoted time and effort to the Taiwanese market for more than twenty years, ECOVE has always held fast to our corporate culture of "Professionalism, Integrity, Teamwork, Innovation" to optimize 'resource cycling' efficiency" through advanced technical integration applications. On top of conjugating the Company's operating activities to improve the environment, we have also cared for Taiwan's social development for a long time, hence fulfilling our promise of becoming "the most reliable" brand.

Professionalism	Integrity	Teamwork	Innovation
Safety First	Morality	Open Communication	Challenge the Current Situation
Meet Quality and Schedule Requirements	Commitment	Accountability	Open-minded
Keep Learning	Honesty	Synergy	Expand Perspectives

Most Reliable



ECOVE Solvent Recycling Corp. under ECOVE passed the carbon neutral verification; First in the country to obtain international certificates for both circular economy and carbon neutrality

On July 28, 2021, ECOVE announced that its subsidiary, ECOVE Solvent Recycling Corp., which is responsible for the recycling of waste solvents, has been certified by the British Standards Institution (BSI) as carbon neutral according to the internationally accepted PAS 2060 carbon neutral standard to achieve carbon neutrality for the whole plant, making it the first chemical material manufacturer in Taiwan to declare carbon neutral. Carbon neutrality is a voluntary verification. By implementing carbon emission reductions from its own operations and obtaining external credits such as purchasing renewable energy certificates or using green electricity to offset carbon emissions from its own operations, ECOVE Solvent Recycling Corp. passed the PAS 2060 verification, resulting in no net increase in greenhouse gas emissions in the atmosphere.

After obtaining the world's first "BS 8001 Circular Economy Audit Statement" in 2017, in 2020, ECOVE once again passed the audit of the BS 8001 Circular Economy Standard for "resource cycling service integration, innovation, and efficiency improvement", accomplishing the feat of certification of Circular Economy Standards in all business areas. ECOVE Solvent Recycling Corp., the plant receiving the on-site audit this time, is the first company in Taiwan to receive both the international certificates of circular economy and carbon neutrality, gradually achieving the vision of being a carbon neutral benchmark company.

ECOVE has long been committed to climate change mitigation, refining and integrating technology applications and innovative business models in three business areas covering "waste management and incineration, recycling and reuse, and renewable energy". ECOVE Solvent Recycling Corp. was established in 2018 to provide recycling and reuse services of waste solvents. This helps waste solvents to re-enter the market supply chain as industrial raw materials, thus reducing the consumption of petroleum raw materials and resources from this planet. Adhering to the concept of green production and friendly environment, ECOVE Solvent Recycling Corp. has been improving its plant from the perspective of low carbon factory. In addition to the selection of energy-efficient equipment, the intelligent and systematic management after the operation, and the subsequent change of boiler fuel (heavy oil to natural gas), the improvement of air conditioning, air pressure, and thermal system efficiency, as well as the installation of energy-saving controllers and the replacement of light fixtures have been implemented to reduce carbon emissions to maximize the overall effect. In addition, ECOVE Solvent Recycling Corp. has implemented various management systems such as Environmental Management System (ISO 14001), Quality Management System (ISO 9001), Occupational Safety and Health Management System (ISO 45001), and Greenhouse Gas Inventory Management System (ISO 14064-1) to ensure the effective operation of green processes and products, and to specifically achieve the carbon neutral goal.



ECOVE Solvent Recycling Corp. obtained international certificates for circular economy and carbon neutrality.





Message
from Chairman

Overview

Corporate
Governance

Environmental
Sustainability

Social
Co-prosperity

Appendix

Corporate Governance

We are committed to incorporating SDGs into the Company's development strategies and to solving environmental and social problems through management activities. Moreover, we are committed to have transparent exposure of performance related to the SDGs to achieve sustainable business development.

12

Corporate Sustainability Management

26

Ethical Corporate Management

37

Innovation and Supply Chain

45

Most Reliable

Performance Highlights

TOP 5%

Top 5% of the Governance Rating of the FSC for 8 consecutive years

TOP 10%

Top 10% of the FSC's "Non-Financial Electronic Companies with Market Capitalization over NT\$10 Billion" TWSE/TPEX-listed companies
(the only TWSE/TPEX-listed company for 3 consecutive years)

Excellent

Excellence in the incineration plant evaluation by the Environmental Protection Administration

Enterprise Environmental Protection Award

the Environmental Protection Administration's 3rd National Enterprise Environmental Protection Award - Honorary Environmental Protection Enterprise Award

over 300%

the issuance of green bonds with an over-subscription rate of over 300%

Corporate Sustainability Management

Starting with our core operating activities, ECOVE has taken concrete steps to fulfill our corporate social responsibility, ceaselessly monitored sustainable development trends at home and abroad, and actively responded to the United Nations Sustainable Development Goals (SDGs). We ensured the implementation of corporate social responsibility through a sound corporate sustainable management structure in addition to maintaining the steady growth of business operations. Through listening and collaboration, we worked together with various stakeholders to continuously create sustainable value in the three core areas.

Sustainability Policy and Promotion Structure

GRI 102-19~21, 102-26, 102-30~34

Sustainability Policy and Vision

As the most reliable provider of industry-leading ‘resource cycling’ services, ECOVE sees fulfilling corporate social responsibility as an important part while carrying out operations. While pursuing the best interests for our shareholders, we also take into account the rights and interests of relevant stakeholders to create a sustainable and better living environment together. To fortify sustainable management, ECOVE has set a vision for sustainability strategy which covered the three areas of corporate governance, environmental sustainability, and social co-prosperity, and will stay true to "strengthening the Company's management structure", "committing to realizing environmental protection", and "fulfilling the responsibilities as a corporate citizen".

● Vision for Sustainability Strategy



Strengthening the Company's management structure

With an eye on achieving the goals of sustainable development, ECOVE formulated effective internal control systems and established effective management mechanisms on top of adhering to laws and regulations.

Striving to carry out environmental preservation in practice

Apart from providing various environmental protection services, ECOVE is also committed to technological upgrading, and invited partners to jointly realize the goals of sustainable environmental ecology.

Fulfilling the responsibilities as a corporate citizen

By long-term commitment to talent cultivation through various ways, we assist in enhancing professional knowledge sets. At the same time, the well-being of the public is improved to achieve the goal of inclusive growth.

In addition, with an eye to further practice the spirit of corporate sustainability, ECOVE has formulated the "Corporate Social Responsibility Best Practice Principles", pledging to implement corporate governance, develop a sustainable environment, safeguard public welfare, and strengthen the disclosure of corporate social responsibility information. The principles guide us to place emphasis on environmental, social, and corporate governance issues while we pursue sustainable operation and profitability.

● ECOVE Corporate Social Responsibility Best Practice Principles



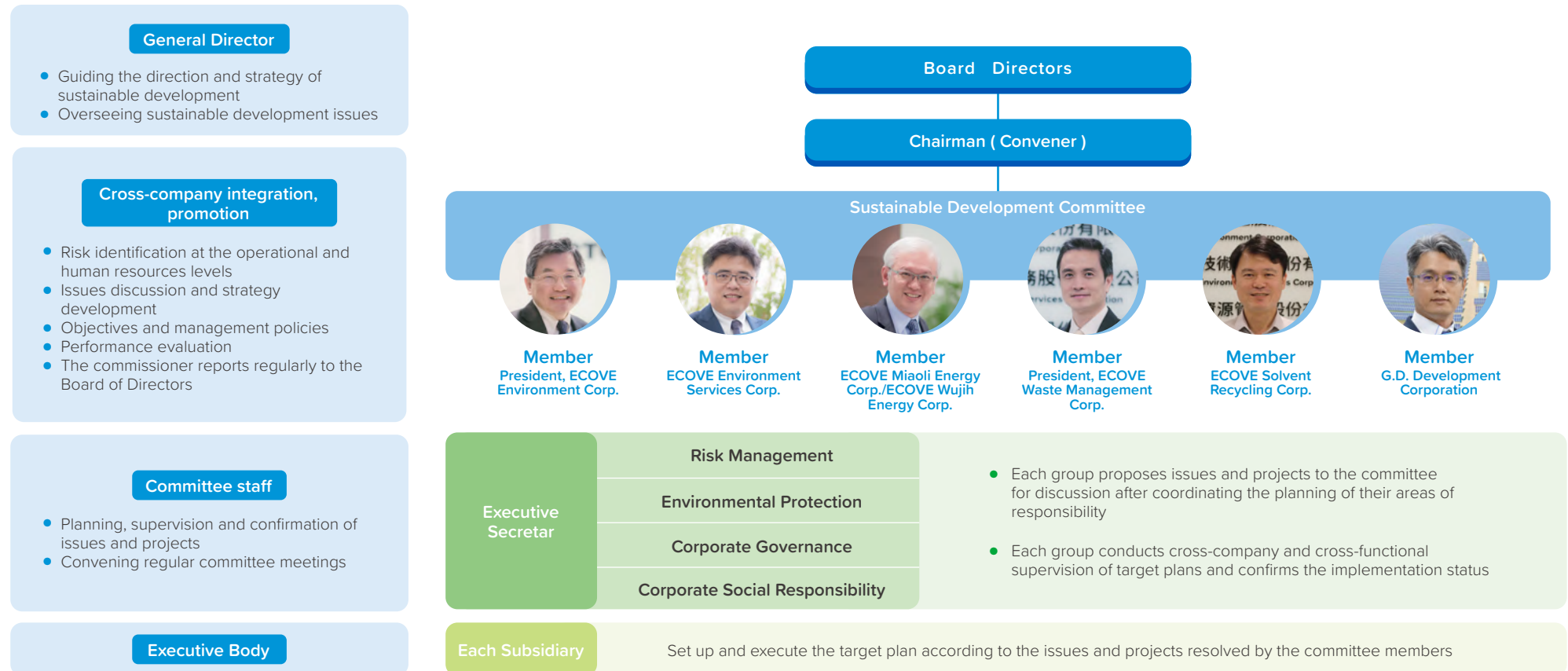
Corporate Sustainability Promotion Framework

In order to ensure the concrete implementation of corporate social responsibility, ECOVE established a Sustainable Development Committee to be the decision-making unit for the Company's sustainable development, coordinating corporate social responsibility, risk management, environmental protection, and corporate governance-related matters etc. The Sustainable Development Committee is chaired by the President and comprises of the Chairmen, Presidents, and department heads of all subsidiaries. Committee meetings are convened every half a year, where mid-year review of the progress of implementation is carried out during meetings on the first half of the year while the sustainable development implementation results of the current year and plans for the upcoming year are discussed during meetings in the second half of the year, so as to track and implement the sustainable development. Ad hoc meetings are held as and when necessary. There

are three sustainability taskforce groups under the committee, namely, CSR Taskforce, Environmental Protection Taskforce, and Corporate Governance Taskforce. These taskforce groups are made up of department heads of relevant units so as to holistically drive sustainable development.

The Sustainable Development Committee also submits regular reports annually to the Board of Directors on the sustainable development implementation results and plans for the upcoming year. Sustainable development-related activities shall be implemented according to the plans, and the key performance indicators of senior executives are also linked with performance in sustainability to implement sustainable development.

Organizational Structure of the Sustainable Development Committee





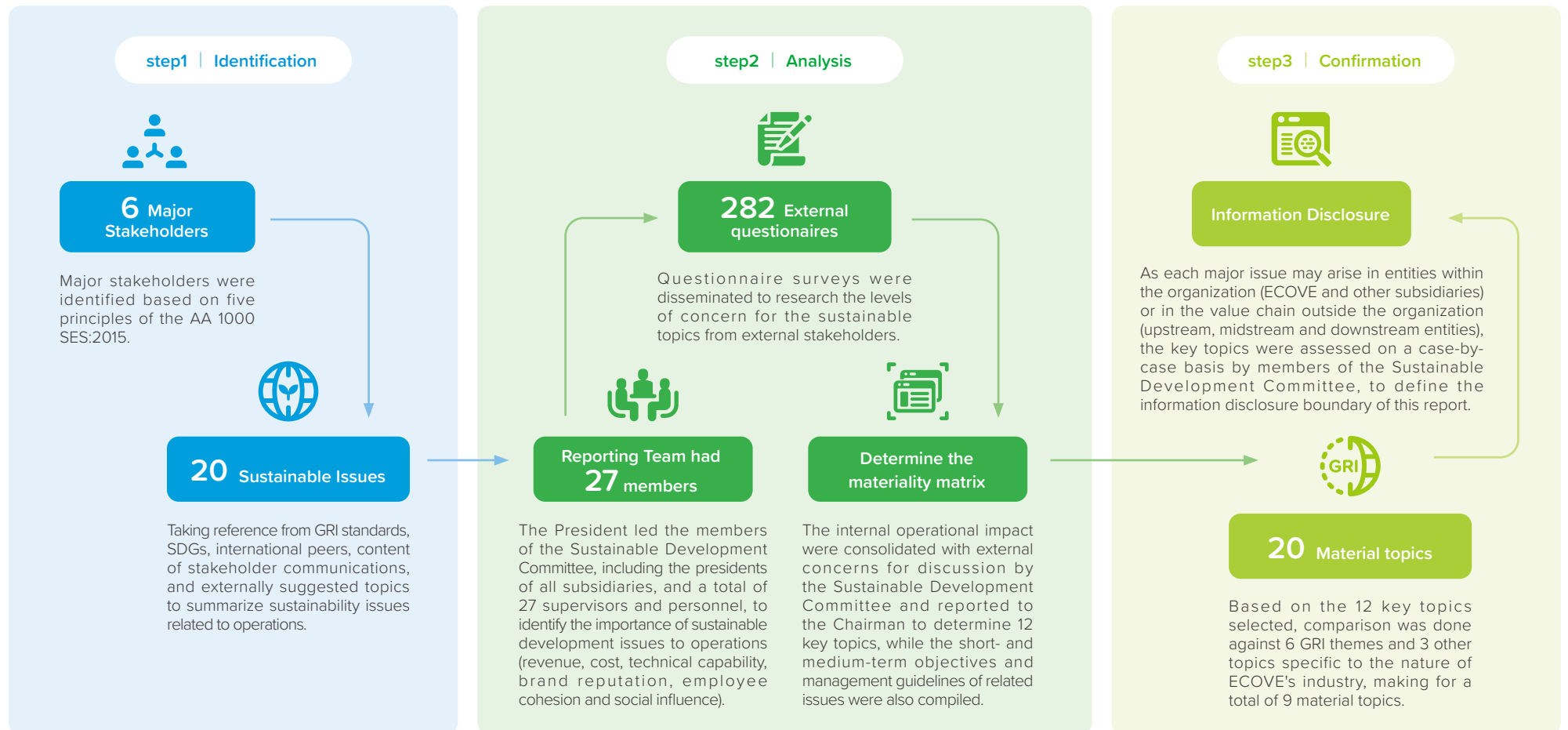
Materiality Analysis

GRI 102-40, 102-42~44, 102-47, 103-1~2

ECOVE reflected on the challenges and opportunities of implementing sustainability from the operations core standpoint and conducted a comprehensive materiality analysis based on the principles of inclusiveness, materiality, and integrity of GRI Standards and with the participation of members of the Sustainable Development Committee and external stakeholders. In terms of sustainability issues, we took reference from international standards and norms including GRI Standards and SDGs (Sustainable Development Goals), and incorporated these into the content of the Sustainability Accounting Standards Board (SASB), as well as referring to contents of communication with international peers

and stakeholders, and issues suggested by external experts to identify sustainability issues which have a impact on ECOVE, and corresponding management policies are then formulated and integrated into operational activities.




Compared with the previous year, we have made minor adjustments on the names of material issues from "ethical and moral integrity" to "honest management", "supply chain management" to "sustainable supply chain management", and "employee benefits and compensations" to "employee care".




Stakeholder Communications and Feedback

ECOVE has established a diversified communication mechanism to listen to suggestions and understand the expectations and concerns of stakeholders, all of which serve as the driving force for improvements and refinements. Using the AccountAbility 1000 Stakeholder Engagement Standard:2015 standards (AA 1000 SES:2015), we quantified

and assessed the extent to which stakeholders affect ECOVE's operations based on five principles of dependency, responsibility, impact, diversity of perspectives, and tension. Thereafter, members of various CSR units jointly identified six major stakeholders, namely, employees, government, customers, shareholders, suppliers, and communities.

 <p>Employees</p> <p>Conscientious employees are ECOVE's greatest assets.</p>	<p>Topic of Concern</p> <ul style="list-style-type: none"> Employee Benefits and Compensations Talent Retention and Recruitment <p>Response</p> <ul style="list-style-type: none"> Adjust salaries based on the market standards and competitors' employee benefits Implement talent development plans and customize individual development plans (IDP) Participate in campus recruitment programs, employment pilot schemes for vocational high school students, etc. <p>Method/Frequency of Communication*</p> <ul style="list-style-type: none"> Annual adjustments of salaries based on the industry standards and competitors' employee benefits to ensure salaries are competitive/ Annually Execute talent development plans and customize IDPs for employees with potential and who are technically competent/ Annually Participate in campus recruitment programs, employment pilot schemes for vocational high school students, etc./Annually 	 <p>Shareholders/ Investors</p> <p>ECOVE upholds the principles of openness and transparency in the disclosure of information for investors of the Company</p>	<p>Topic of Concern</p> <ul style="list-style-type: none"> Corporate Governance Financial Performance <p>Response</p> <ul style="list-style-type: none"> Disclose financial, business and operating information to attract investors <p>Method/Frequency of Communication*</p> <ul style="list-style-type: none"> Annual general meeting/ Annually Investor conference/ Quarterly Extraordinary shareholders' meetings/as needed Investor's section/as needed Market Observation Post System (MOPS)/as needed Telephone communication/ as needed 	 <p>Communities</p> <p>Promote public participation through environmental education and media channels by coordinating unique features in neighborhoods around our facilities</p>	<p>Topic of Concern</p> <ul style="list-style-type: none"> Social participation <p>Response</p> <ul style="list-style-type: none"> Explain and communicate various issues brought up by residents Communicate pollution prevention monitoring results and public opinion <p>Method/Frequency of Communication*</p> <ul style="list-style-type: none"> Friendly community promotion activity/Ad hoc Environmental education visit/Ad hoc Care for the underprivileged/Ad hoc Environmental protection/ Ad hoc
<p>Results of Communication</p> <ul style="list-style-type: none"> Annual increase in wages Annual periodic review Annual review IDPs for employees with potential 8 campus recruitment sessions Participation in campus recruitment sessions in 2021 	<p>Results of Communication</p> <ul style="list-style-type: none"> One session General Shareholders' Meeting Four sessions Investor Conference 	<p>Results of Communication</p> <ul style="list-style-type: none"> 53 sessions Environmental education activities 4,370 participants Environmental education activities 2,000 hours Employee volunteering hours 			





Suppliers/ Subcontractors

Mutually assisting partners who supply materials and cooperate in innovation and in value creation

Topic of Concern

- Supply Chain Management
- Occupational Safety and Health

Response

- Ensure quality and delivery of materials to maintain stable operations at all sites/projects

Method/Frequency of Communication*

- Assessment of suppliers/ Annually
- OSH coordination meeting/ Biannually
- Coordination meeting/ Monthly
- Phone, email, or fax/Ad hoc
- On-site acceptance visit/ As needed according to demand

Results of Communication

- 24 sessions**
Supplier communication meetings
- 12 sessions**
Supplier acceptance visits



Customers

Bring about more growth in ECOVE through service and communication

Topic of Concern

- Occupational Safety and Health
- Service Quality

Response


- Organize drills in occupational safety and health mechanisms and service processes
- Waste scheduling coordination and communication
- Improve performance with feedback on existing projects

Method/Frequency of Communication*

- Work meeting/Biannually
- Questionnaire/Biannually
- Trade union or bilateral visit and communication/ Quarterly, ad hoc

Results of Communication

- 8 sessions**
Occupational safety and health or service process training per customers' concern
- 21 Incidents**
Customer feedback



Government

Comply with and consult with regulations to smoothly execute related operations and maintain smooth operations

Topic of Concern

- Communication with competent authorities
- Amendments to policies and laws

Response

- Revise relevant measures in accordance with policies and laws
- For non-compliance with regulations, issues shall be fixed within the timeline set and punishments meted out according to regulations

Method/Frequency of Communication*

- Participation in public hearing or briefing/Ad hoc
- Announcement of policies and regulations of competent authorities/Ad hoc
- Correspondence from the competent authorities, response by the Company or on-site inspection/Ad hoc

Results of Communication

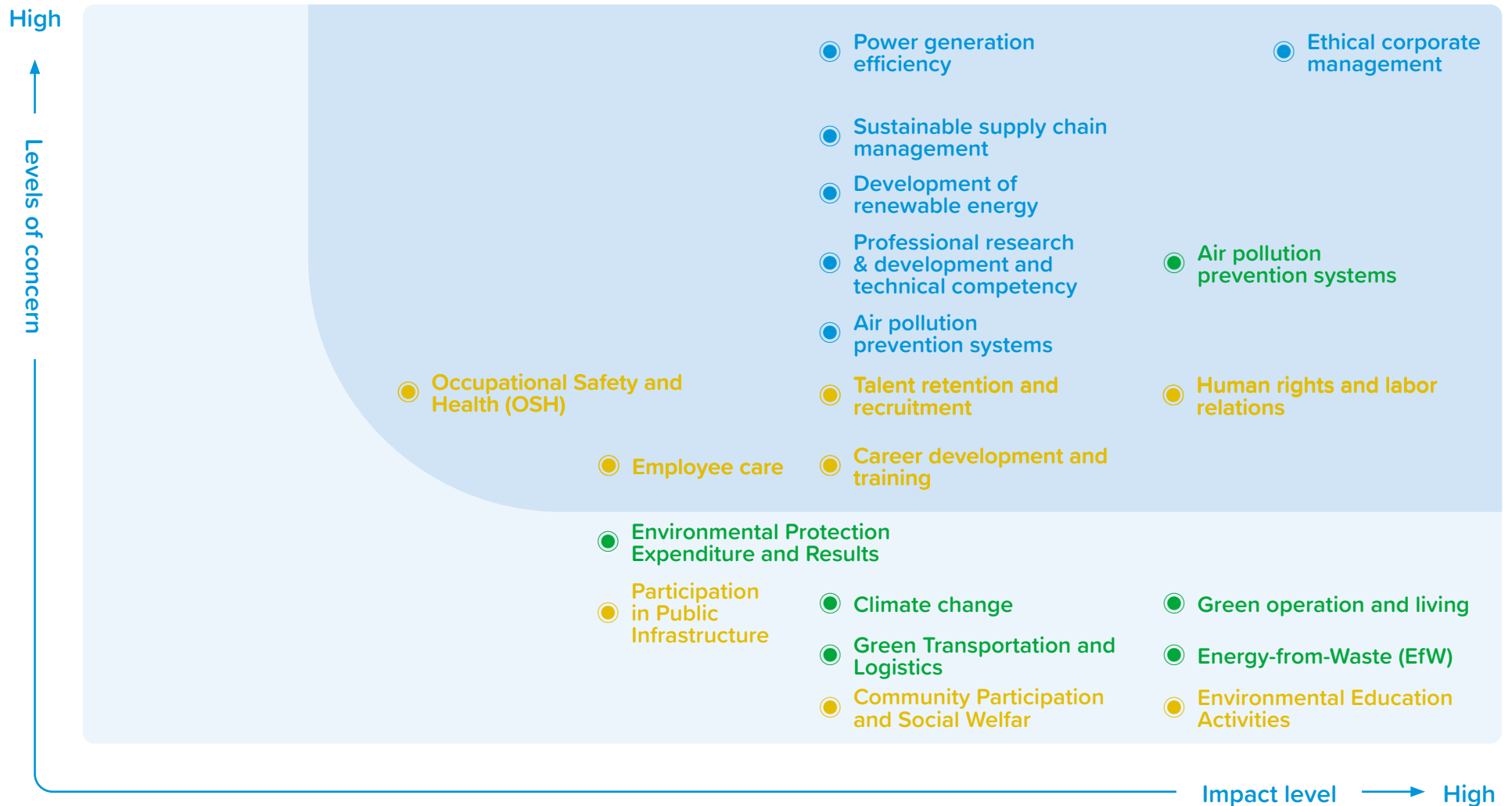
- Continuous participation**
Public hearing or briefing
- Continuous improvement**
Violations (if any)



Material Issue	GRI Material Topics	SASB Theme	Corresponding Chapter / Page Number	Value Chain									
				Within the organization					Outside the organization				
				ECOVE	Subsidiary	Upstream		Midstream		Downstream			
					ECOVE WMC / ECOVE Solvent Recycling Corporation / ECOVE WEC / ECOVE ESC / ECOVE Solar Energy Corporation / ECOVE MEC	Domestic waste/ General household	General industrial waste/ General industry	Township Office Cleaning Squad	Waste disposal institution	Foreign waste treatment institution	Waste recycling (incineration) plant	waste treatment entity	Waste Reuse Institution
Integrity Management	Anti-corruption (205)	-	Legal Compliance	●	●	●	●	●			●		
Power generation efficiency	Specific to ECOVE	-	Energy from Waste (EfW)	●	●	●		-			●		
Development of Renewable Energy	Specific to ECOVE	-	Circular and Low-carbon Economy	●	●	-		-			●		
Professional research & development and technical competency	Specific to ECOVE	-	Innovative Research and Development	●	●	-		-			●		
Development of Renewable Energy	Specific to ECOVE	-	Innovative Research and Development	●	●	-		-			●		
Sustainable supply chain management	Procurement practices (204)	-	Sustainable supply chain management	●	●	●		●			●		
Air Pollution Prevention	Emissions (305)	Air Quality	Energy from Waste (EfW)	●	●	●		●			●		
Occupational Safety and Health	Occupational Safety and Health (403)	Workforce Health & Safety	Safe and healthy workplace	●	●	-		-			-		
Employee care	Employment (401)	-	Talent Composition and Compensations	●	●	-		-			-		
Career Development and Training	Training and education (404)	-	Talent Development	●	●	-		-			-		
Talent Retention and Recruitment	Employment (401)	-	Talent Development	●	●	-		-			-		
Human rights and labor relations	Employment (401)	Labor Practices	Human rights protection and benefits	●	●	-		-			-		



● Materiality matrix



Social issues

Environmental issues

Economic issues



● Risk/Opportunity and Management Approach for Sustainability Topics

2021 Sustainable Topics	Potential Risks	Potential Opportunities	Management Approach			2021 Target	Achievement in 2021 (V: Achieved X: Not achieved)	Long-term goals (2025)
			Policy	Commitment	Action initiative			
Integrity Management	Violation of the code of conduct and integrity may result in losses to the Company	Avoid any bribery, fraud, extortion, abuse, misappropriation of Company assets or personal gain at the expense of the Company	ECOVE has put in place internal regulations, conducts educational training and advocacy, provides reporting channels and protection, to cultivate a culture of professional ethics and legal compliance	Improve corporate governance system, strengthen management function, to protect the rights and interests of stakeholders	Signing of Employee Letter of Undertaking of Integrity by all employees and carry out educational training courses	100% of ECOVE's employees abided by the Government Procurement Act and the Company's anti-bribery policy	V	100% of ECOVE's employees abided by the Government Procurement Act and the Company's anti-bribery policy
Sustainable supply chain management	Unexpected changes in internal demand, unpredictable natural factors or lack of capacity of the vendor, etc. may result in unqualified product supply. Restrictions on specifications or sources reduce the degree of selection	Long-term stable operation is the basis of supply chain interaction and cooperation. Supply and contracting relationships are reliable and can grow together	<ul style="list-style-type: none"> Boost advocacy for CSR through meetings and contacts Drive and implement supplier evaluations Implement local procurement 	Strengthen and enhance the sustainable management performance of suppliers through signing of CSR undertakings and supplier evaluations, thus forming a virtuous cycle and expanding the sustainable impact of suppliers	<ul style="list-style-type: none"> Elevate the awareness of Code of Conduct Implement audit evaluations and rectification measures 	<ul style="list-style-type: none"> 100% signing rate for annual CSR Evaluation of key suppliers reached 100% 	V	Establish a sustainable supply chain management system and implement vendor classification and identification of key vendors
Power generation efficiency	Under the immense pressure of increasing waste volume, the temperature is on the rise year after year due to the global environmental climate, leading to insufficient efficiency of the steam condensation systems, which in turn may reduce the efficiency of power generation	In the future, we can improve the efficiency of power generation and combine with renewable energy to create multiple power generation capacity	Continuously drive system energy-saving improvement measures	Continuously increase the 'Resource cycling' efficiency, reduce the impact on the environment, and shoulder more social responsibility	<ul style="list-style-type: none"> Cooperate with the renovation and replacement of new energy-saving equipment Ensure all system and equipment are in good working condition through management 	Reached 0.5 kWh for power sold per ton of waste	V	Reached 0.56 kWh for power sold per ton of waste
Professional research & development and technical competency	At this stage, the carbon fee and carbon tax cannot make up for the difference in investment cost between sustainable and traditional methods, and it is difficult to achieve a balance between profit and loss	Low-carbon and sustainable methods are applied on a small scale to establish core competencies and to capture market opportunities	Develop low carbon, sustainable, safer, faster, and higher quality engineering methods	Research and develop new engineering methods appropriate to the industry in pursuit of sustainable and highly productive operations	Independent researches by the Technology Development department or requests put forth by other departments in the Company to the Technology Development department	Received 4 patents	V	Receive 4 patents in each year
Development of Renewable Energy	Global raw material prices are rising due to the pandemic; inflation and interest rate hikes increase investment risks and capital costs that affect investment efficiency; labor and material shortages slow down project progress	Benefiting from the policy of energy restructuring, the space for power generation continues to be released. The capital of Taiwan businessmen returns to the market, which increases the demand for green power from large electricity users and green supply chain, and helps enhance revenue and profit	Actively compete for development rights to large-scale projects and increase capacity in solar power-building in line with green energy development	Invest in expanding the scale of operations in line with the government's green energy policy	<ul style="list-style-type: none"> Solar power generation equipment annual grid connection targets Cultivate and maintain long-term and stable collaboration partners and assess opportunities for setting up renewable energy bases overseas Procure modules with improved efficiency, strictly selecting materials with good performance contribution and stable quality 	<ul style="list-style-type: none"> Estimated consolidated capacity achievement rate ≥ 80 % Purchase of modules to improve power generation efficiency ≥ 3% 	V	Cumulatively generated more than 1,000 million kWh of solar power



2021 Sustainable Topics	Potential Risks	Potential Opportunities	Management Approach			2021 Target	Achievement in 2021 (V: Achieved X: Not achieved)	長期目標 (2025年)
			Policy	Commitment	Action initiative			
Circular Economy	<ul style="list-style-type: none"> High ocean freight prices make it difficult to find a container, which increases shipping costs and risks of delivery time Transportation costs increase investor costs and may delay project investment plans, especially in the American market The quarantine policy hinders international travel and is detrimental to business negotiations and engineer installation dispatch 	<ul style="list-style-type: none"> Increased demand for local recycling due to the Basel Convention Brand-driven, with many brands around the world making rPET usage commitments, increasing opportunities for recycling projects New miscellaneous plastic cleaning products, mainly for HDPE, LDP and other waste plastics, to expand the market momentum 	<ul style="list-style-type: none"> Product standardization and diversification, equipment automation, engineering documentation completion, equipment and engineering services integration Expand the recycling facilities for various types of waste plastics, in order to collect various types of waste plastics in a wider range and enhance the contribution to the maintenance of global resources 	<ul style="list-style-type: none"> Transform from a professional provider of PET recycling and cleaning services to an engineering company with comprehensive integration of plastic recycling industry chain to realize sustainable operations Help customers grow steadily with more energy-efficient and emission-reducing equipment products 	<ul style="list-style-type: none"> Project management systems, project risk controls, project specialized responsibility systems Stable supply chain, elevate qualifications of supply chain vendors Guidance on equipment assembly standards, complete engineering design supporting documents, remote guidance on installation and commissioning; join the Alliance to End Plastic Waste to reduce environmental pollution 	<ul style="list-style-type: none"> Implementation of project-based operation Implementation of project manager responsibility to drive the project Completion of ISO standard and equipment safety directives (CE) 	V	<ul style="list-style-type: none"> Obtain the largest market share in Western Europe in terms of tonnage of new cleaning equipment and tackifier equipment by 2025 The degree of automation, durability, functionality and energy consumption of cleaning products surpasses that of the European leaders
	In response to the trend of carbon reduction and circular economy, enterprises are moving towards the closed-cycle mode of electronic reuse, which may lead to the risk of volume reduction	Due to the trend of closed-cycle, there are opportunities for companies to build systems and operation and maintenance services in the plants	Continue to invest in various waste reuse business to increase the rate of reuse	Improve the integrated application of technology, enhance competitiveness, and achieve sustainable operation	Obtain approvals from the Ministry of Science and Technology (MOST) for general case recycling and Ministry of Economic Affairs (MOEA) for individual case recycling	Increase the number of plants after successfully obtaining approvals from the Ministry of Science and Technology (MOST) for general case and Ministry of Economic Affairs (MOEA) for individual case	V	In response to the trend of carbon reduction and circular economy, we will develop towards electronic level and provide one-stop service for enterprise system construction, operation and product sales.
Air Pollution Prevention	The government may tighten the regulatory values or increase the number of controls each year, which may increase the use of process chemicals or require process changes to meet the standards	Reduce pollutant emissions or achieve cost savings by introducing foreign technology to incinerators	Tighten waste inspections, reduce inflammable waste from entering the plants, and maintain the normal operation of air pollution control systems	Contribute to the sustainability of the environment by setting carbon reduction targets in compliance with laws	<ul style="list-style-type: none"> Confirm the proportion of waste entering the plants and that air pollution prevention equipment are functioning normally through regular inspections Execute operations through internal control values that are more stringent than regulations 	Reached 100% approval rate for waste gas emission quality inspection	V	Reached 100% approval rate for waste gas emission quality inspection
Occupational Safety and Health	Cardiovascular disease risk (stroke, myocardial infarction, etc.)	<ul style="list-style-type: none"> New staff interview records, timely inquiries about exercise habits, and increased inclusion of response and health status items Complete the certification of the AED safety site in both factories in 2022 Organize CPR+AED education and training for all staff to reduce staff health risks through professional training 	Implement management through ISO 45001 and CNS 45001 OSH Management Systems	<ul style="list-style-type: none"> Safety First Promotion of employee health and welfare Environmental protection and sustainable development Implementing risk management systems Meeting regulatory and contractual requirements Promoting employee participation in training Continuing to improve safety, health, and environmental systems 	<ul style="list-style-type: none"> Formulate HSE goals Implement on-site safety and health management Conduct general and on-the-job education and training Implement safety and health audit systems Put forward corrective measures on-the-spot Performance measurements and continuous improvements 	ISR≤0.6 IFR≤0.15 TRCR≤0.15	X(Not achieved) ISR=11 IFR=0.07 TRCR=0.13	ISR≤0.6 IFR≤0.15 TRCR≤0.15



2021 Sustainable Topics	Potential Risks	Potential Opportunities	Management Approach			2021 Target	Achievement in 2021 (V: Achieved X: Not achieved)	Long-term goals (2025)
			Policy	Commitment	Action initiative			
Talent Retention and Recruitment	Failure to recruit the right quality of talent in a timely manner may affect the business	The right people are the only way to achieve corporate sustainability	Spare no effort to cultivate outstanding employees, encourage continuing education and sharing of knowledge and skills, and create a healthy and friendly workplace	Improve employees' identification and compliance with ECOVE's corporate culture to bring employees' talent into full play	Develop human resource policies, formulate fair and incentivizing performance appraisal, salary, and reward policies	The turnover rate to be less than or equal to a reasonable range of 5% to 8%	V	<ul style="list-style-type: none"> The turnover rate to be less than or equal to a reasonable range of 5% to 8% Recruit talent that agrees with ECOVE's corporate culture
Human rights and labor relations	Failure to appropriately protect employee rights will not only affect the Company's reputation, but also erode employee loyalty and reduce the attractiveness of recruiting talent	Provide diversified learning resources and channels to encourage employees to learn on their own and enhance their performance and potential	Implement diversified communication channels, online opinion platform, forums with senior managements, labor-management conferences, employee satisfaction surveys, etc	ECOVE is committed to the belief of benefit sharing, providing a good working environment and smooth working channels, and continuously enhancing the harmonious communication between employers and employees	Increase communication frequencies and methodologies to promote labor-management harmony	There were no labor disputes or penalties for labor law violations during the year	V	There were no labor disputes or penalties for labor law violations during the year
Career Development and Training	Failure to keep up with the times will erode the Company's competitive advantage and growth momentum	The growth of the Company is closely related to the personal learning and development of employees. Personal learning and development not only help to improve the performance of work, but also give employees the opportunity to apply it in their daily lives, which will contribute to the upward mobility and progress of society	Promote of mobile training platform so that employees can learn professional knowledge from anywhere and rely on robust control mechanism to effectively realize the employee training system and development blueprint	Comprehensive talent nurturing and in line with business development, elevate the professional capabilities of employees	Plan employee career development, education and training curriculum, and performance indicators to enhance the professionalism of personnel	Total employee training hours is 18,000 hours	V	Total employee training hours is 18,000 hours
Employee care	Assist employees to maintain physical and mental health and work-life balance	Provide employees with a balanced life between family and work	Establish a fair and competitive employee compensation system that links with future business strategies and goals	Promise to offer employees fair and competitive salaries and benefits	Update salary scale according to the latest market trends	Provide competitive employee salaries and benefits	V	Provide competitive employee salaries and benefits



Response to the United Nations' Sustainable Development Goals (SDGs)

ECOVE carried out a comprehensive inventory of organizational objectives and practices, starting from our core competencies, and internalized SDGs into operational activities, deepened the Company's sustainable development so as to mitigate the impact of operating activities, and apprehend the opportunities for sustainable development.

SDG 3 Good Health and Well-being

People-oriented employee care

- Long-term monitoring and tracking of dioxin level in blood for employees
- Passed ISO 45001 certification
- Total Recordable Case Rate (TRCR) is 0.13
- Provided annual health checkups, including the tracking of health checkup status and assisting high-risk personnel to seek medical attention

SDG 4 Quality Education

Promote environmental education to foster a green future

- 2021~2025 "Step by step: Factories for Sustainable Environmental Education"
- Promoted 21 elementary schools in 2021
- 5 incinerators certified as environmental education sites

SDG 6 Clean Water and Sanitation

Water resource recycling and reuse

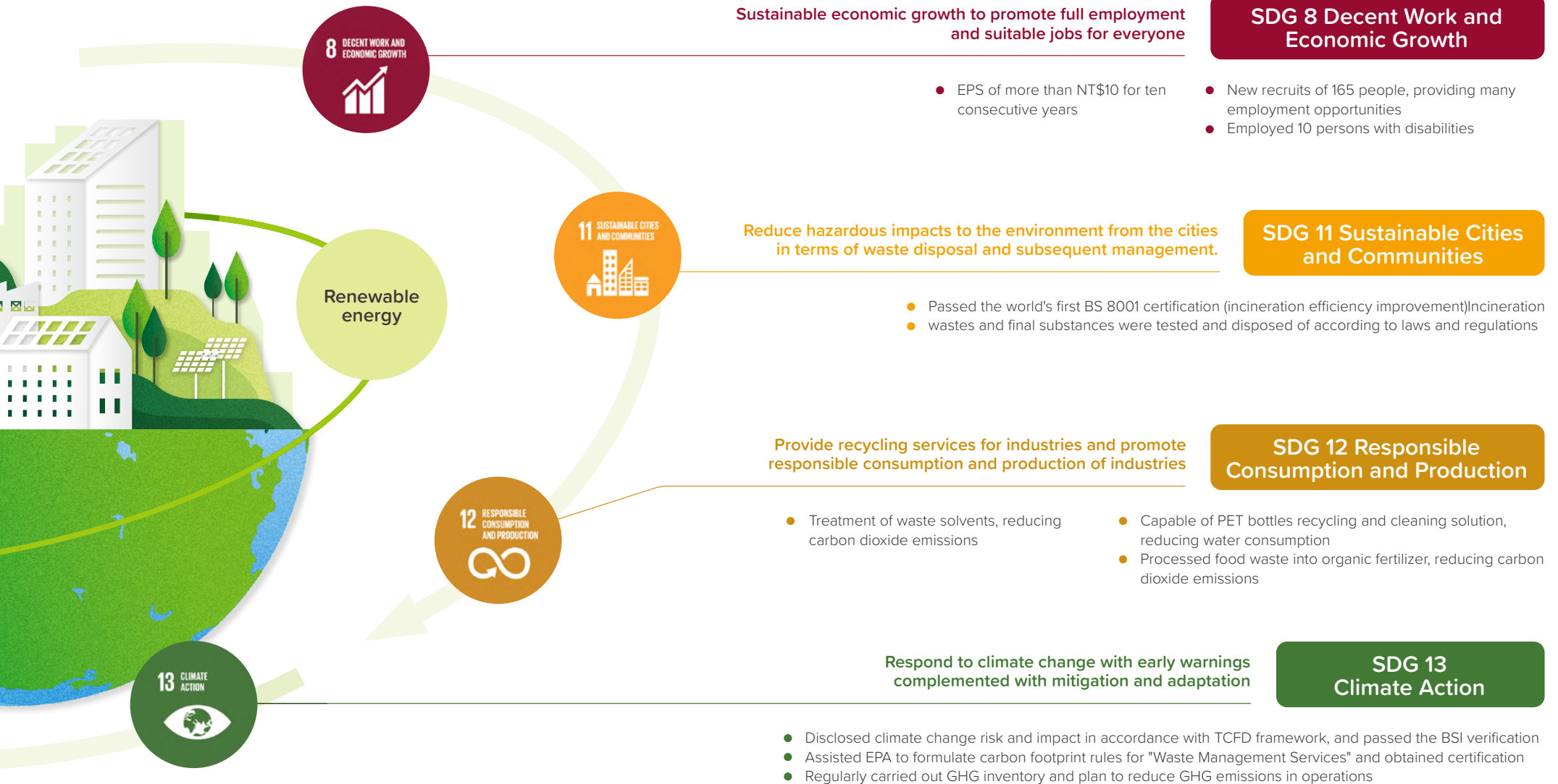
- Water resource recycling and reuse passed the BS 8001 certification
- Total of 27,899,972 metric tons of sewage was treated in 2021
- Recycling and reusing through eco-engineering methods and different levels of pollutant treatment

SDG 7 Affordable and Clean Energy

Recycling of renewable energy

- Continuous installation of solar panels with a total annual capacity of approximately 94,774 MWh
- Incinerators sold back a total of 1,191,817 MWh of electricity to Taipower, representing 82.2% of its total electricity generation







Participation in External Organizations

GRI 102-13

Membership in Associations

By participating in various associations and organizations related to industry development, we can strengthen our ties with the industry and the latest technologies. On top of enhancing service competitiveness and realizing industry influence, we can also increase the opportunities to form strategic alliances to create opportunities for business growth.

ECOVE has accumulated more than two decades of experience in the operation and management of incineration plants, as well as renewable energy, recycling and other fields which we have collectively developed in recent years. In addition to being invited to share Taiwan's experience with forums at home and abroad, we were also featured on the various key media.

Name of Organization	Participating Identities
Water Affairs Organization Taiwan	Executive Director
Taiwan Institute for Sustainable Energy (TAISE)	Member
Taiwan Electric Power Association (TEPA)	Member
Taiwan Environmental Engineering Association	Member
Taiwan Water Pipe Engineering Association	Member
Taiwan Telecommunication Engineering Industry Association	Member
Taiwan Boiler Association	Member
Taiwan Refrigeration & Air-conditioning Engineering Association of R.O.C.	Member
Sustainable & Circular Economy Development Association	Director
Taiwan Resource Recycling Industries Association	Member
Taichung Waste Management Commercial Association	Member
Solar PV Generation System Association of R.O.C (PVGSA)	Member

Miaoli plant was reported by Global Views Monthly for its five-star "intelligent facilities"

The only incineration plant in Taiwan that co-exists amicably with wetlands

Shockwave cleaning technology effectively improves boiler efficiency and operation rate! Published on the "Power Magazine", a renowned international publication

Participation in Seminars or Forums

ECOVE actively participates in national and regional environmental policies and issues, and we share more than 20 years of experience in resource cycling industry development and operating strategies with public and private groups from the government, industry, and the academia as well as the public in response to invitations from domestic and overseas government or non-governmental organizations. This helps to co-build cornerstones for the development of the circular economy and ensure that we always stay on top of the trends.

Organizers	Content of speech / report
Environmental Protection Administration	Planning and Selection of Air Pollution Control System for Stationary Sources
	Operation and Maintenance of Air Pollution Control System for Stationary Sources
	Waste Cleaning Permit and Reporting Practice
	"Sharing by Resource Recycling Excellent Enterprise" Organic Chemicals - Waste Solvents Recycling
Industrial Development Bureau, Ministry of Economic Affairs	Practical Sharing of Rotary Kiln Combustion Air System Optimization
Financial Supervisory Commission R.O.C	How the Board Realizes ESG Management Performance
Taipei Exchange	Keeping Abreast with Trends towards Sustainable Management
Taiwan Water Environment Association	Intelligent Solution Application for Water Treatment Operation and Maintenance- Taking Linkou Water Resources Recycling Center as an Example
CTCI Education Foundation (CTCI EF)	"Sustainable Engineering Forum" Intelligent Green Technology
PricewaterhouseCoopers Taiwan	In-depth Interviews regarding Taiwan Business Leaders Survey
2021 Cross-Strait, Hong Kong and Macau Solid Waste Management Forum of The Macau Institution of Engineers	The direction of change of waste incineration plant operation and management model in the post-pandemic era

Organizers	Content of speech / report
Taiwan University and Beijing Environmental Protection Bureau "Waste Removal and Treatment Practice Exchange Seminar"	Operation and management of private waste removal organizations in Taiwan
	Response to special events of waste removal and treatment
	Management and effectiveness of waste recycling in industrial parks
	Effectiveness and trend of third-party monitoring of waste removal
Taiwan University	The challenge of environmental engineers under the trend of sustainability
Feng Chia University	Waste Issues Outside the University
Chung Yuan Christian University	The challenge of environmental engineers under the trend of sustainability
Chung Yuan Christian University	Overview of Resource Recycling Company Operations - An Example of ECOVE
Chia Nan University of Pharmacy and Science	Experience Sharing on Climbing the Incinerator to Increase the Sense of Mission of Occupational Safety and Health
National Yunlin University of Science and Technology	The challenge of environmental engineers under the trend of sustainability
National Yunlin University of Science and Technology	Design Overview on Incineration Plant Waste Gas Treatment System
Vanung University	Water and wastewater treatment / operation and maintenance of pollution control facilities



The Chairman of the Board of Directors was a panelist at the "Taipei Corporate Governance Forum" to share the views on the functions of a sound Board of Directors to enhance corporate sustainability, with nearly 4,000 participants.



Experience Sharing on Climbing the Incinerator to Increase the Sense of Mission of Occupational Safety and Health at "Chia Nan University of Pharmacy and Science"



On December 17, 2021, ECOVE, CTCI, and CTCI Education Foundation co-hosted the first "Taiwan Forum on Sustainable Construction - Smart Green Technology" at the GIS MOTC Convention Center, inviting nearly 200 renowned experts and scholars to discuss issues related to sustainable development and net-zero carbon emissions.



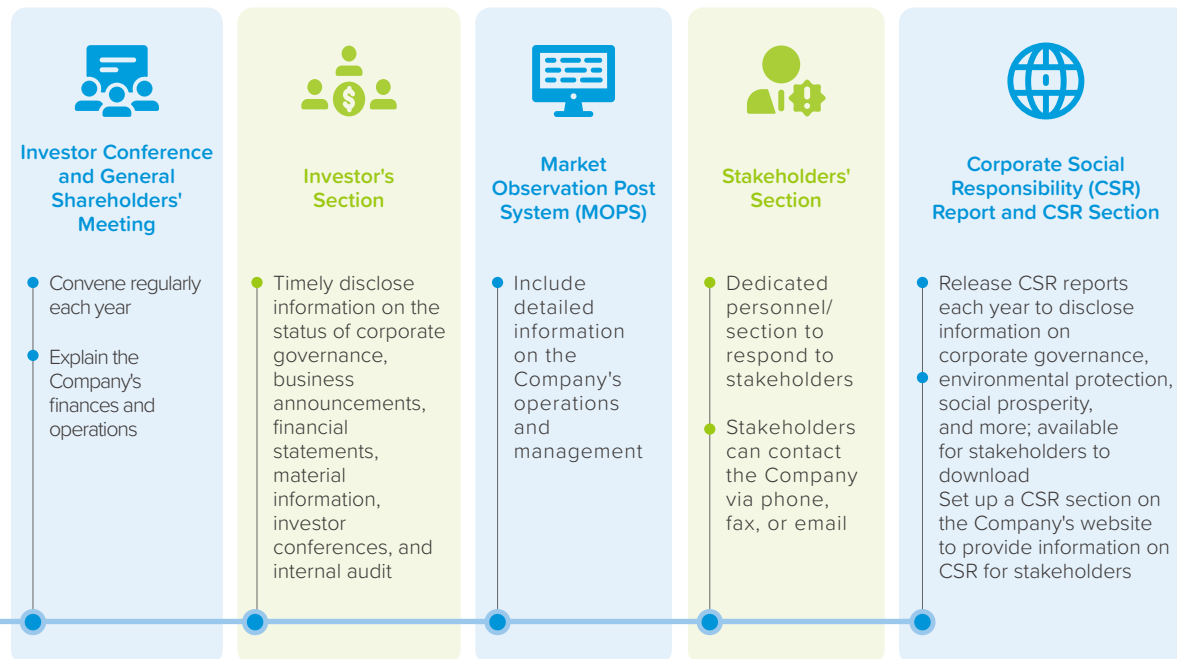
Ethical Corporate Management

GRI 102-18, 102-22~25, 102-27~28, 102-36~37, SASB IF-WM-120a.3

The sustainable development of enterprises is underpinned by excellent corporate governance. We see Ethical Corporate Management as the supreme principle, implement sound risk management, comprehensive information security management, and actual compliance with laws and regulations. As a means to achieve the goal of sustainable co-prosperity, we took a proactive approach to understand and respond to the needs of various stakeholders through a variety of information disclosure channels on top of rigorously safeguarding shareholders' rights and interests.

Management Governance

ECOVE sees ethical business management as the basic principle of corporate governance, and it is our objective on top of focusing on robust organizational growth and satisfying investors and various stakeholders. We have established a diverse range of communication channels to provide relevant information, such as designated CSR section and stakeholder section, to provide investors and stakeholders with symmetrical information, and implement integrity and transparency in corporate governance, so as to meet the expectations of various stakeholders and achieve effective communications.



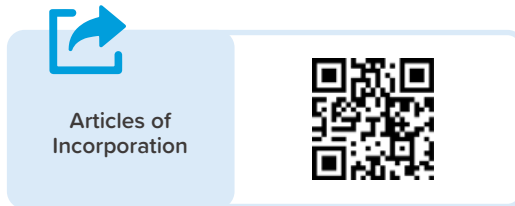
In addition to focusing on resource cycling in our investment strategies, ECOVE places an even higher emphasis on the execution of sustainable business development. Through the principles of transparent, professional, and sound corporate governance, we were ranked in the top 5% in the Corporate Governance Evaluation by the FSC for eight consecutive years, a testament to our exemplary execution of information disclosure, ethical corporate management, and being a responsible corporate citizen.

● Areas Covered by Governance



Governance Structuer

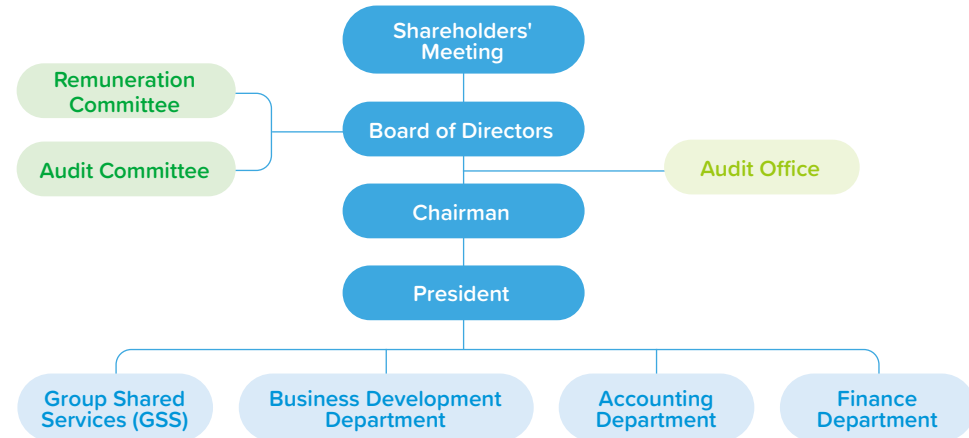
The highest decision-making body for the operation of ECOVE is the Board of Directors. The Articles of Incorporation state that "the Company shall have five to nine directors, all of whom shall be capable and elected by the shareholders' meeting for a term of three years and shall be eligible for re-election. Among the aforementioned number of directors, there are two to three independent directors. The Company's directors (including independent directors) shall be elected by the shareholders' meeting from the list of director candidates under the candidate nomination system as described in Article 192-1 of the Company Act." Therefore, the Board of Directors of the Company consists of nine directors, including three independent directors (approximately 33%), who are responsible for formulating the Company's business direction and important strategies.



The operations of the Board of Directors follow the "Rules Governing Procedure for Board of Directors' Meetings" and the "Rules Governing the Operations of Board of Directors' Meetings", and will convene at least 1 meeting in each quarter. The Board meetings abide by interest recusal system, where in case a director's personal interest is involved in a proposal, the director shall automatically seek for recusal, and shall be prohibited from exercising voting rights on behalf of other directors. In 2021, the average attendance rate of all Board members was 95%. The main responsibility of the Chairman of ECOVE is to supervise the management to ensure that the Company operation and business implementation conform to the business philosophy. The main responsibility of the President is to lead the management team and ensure that the overall operation is carried out in accordance with the instructions of the Board of Directors. The Chairman does not concurrently serve as President to ensure that the duties of the two do not conflict with each other.

To prompt the Board of Directors to fulfill supervision, audit, and management mechanism in practice, ECOVE has established an Audit Committee and Remuneration Committee under the Board of Directors. In addition, an internal audit unit has been set up to comprehensively plan and carry out audit tasks. Besides regularly reporting audit tasks to Independent Directors, they also attend Audit Committee and Board meetings for reporting duties.

Audit Committee Organization Chart



Main Responsibilities

Evaluate the remuneration policy and system of the directors and managers objectively and make suggestions to the Board of Directors accordingly for policy-making reference.

Composition of Committees

The term of office of the 4th Committee
from May 28, 2020 to May 27, 2023
Convener : Shuh-Woei, Yu
Members : James Tsai and Shan Shan, Chou

Meetings

Three meetings were convened in 2021. The average attendance rate of the three members was 100%.

Articles of Association



Main Responsibilities

Established voluntarily since 2014, the Committee is responsible for supervising the fair expression of the Company's financial statements, the selection (dismissal) and independence and performance of CPAs, the effective implementation of internal controls, compliance with relevant laws and regulations, and the control of existing or potential risks.

Composition of Committees

The term of office of the 3rd Committee
from May 28, 2020 to May 27, 2023
Convener : Shuh-Woei, Yu
Members : James Tsai and Shan Shan, Chou

Meetings

Six meetings were convened in 2021. The average attendance rate of the three members was 100%.

Articles of Association






BOARD DIVERSITY

Members of the Company's Board of Directors have the professional knowledge, experiences, and characters to perform their duties, including engineering, petrochemicals, finance, and legal fields. They have in-depth international perspective, decision-making, leadership, and crisis management skills to respond to changes from various economic, environmental, and social aspects. Moreover, we strive to promote Board diversity, and establish a Board diversity policy for the Company's operations, operation model, and development needs, with the specific goals including not more than one-third of the board seats can be taken by directors who are also serving as managers of the Company, at least one of the board seats must be taken by a woman, and having at least two independent directors whose terms of office shall not exceed three consecutive terms. The results of the 2020 Board re-election are in line with the diversity policy. Currently, the Board of Directors consist of eight men above 50 years old and one woman above 50 years old.


Directors' Further Training and Performance Evaluation

In an effort to implement corporate governance, enhance the functions of the Board of Directors, as well as to establish performance targets and strengthen the operational efficiency of the Board of Directors, the Company revised the "Regulations Governing the Board Performance Evaluation" at the 13th meeting of the 7th-term Board of Directors in May 2019, stipulating that performance evaluation of the Company's Board of Directors shall be carried out at least every three years by an external professional independent body or a team of external experts and academics, the results of internal and external performance evaluations of the Board of Directors shall be completed before the end of the first quarter of the following year, and that the scope of evaluation shall be extended to the performance evaluation of the Board of Directors as a whole, individual board members, and functional committees. Evaluation methods include internal self-assessments by the Board of Directors and functional committees (Remuneration Committee and Audit Committee), self-assessments by individual board members, appointment of external professional bodies, experts, or other appropriate means of performance evaluation. The results of the performance evaluation of the Board of Directors of the Company and its subsequent reviews and improvement status shall be disclosed in the Annual Report and on the Company's website, in addition to reporting to the Board of Directors.



Board members' current positions, academic experience, current part-time positions and areas of expertise

Diversification Policy for Board Members and Its Implementation



Results of Board Internal Performance Evaluation

Results of Board External Performance Evaluation

All members of the Board of Directors of the Company have completed the relevant training in accordance with the "Directions for the Implementation of Continuing Education for Directors and Supervisors of TWSE Listed and TPEX Listed Companies", covering topics such as corporate governance, climate change, corporate sustainability, and information security, in order to continue to enhance the understanding of the Board of Directors on emerging issues and to continue to improve the effectiveness of corporate governance. In 2021, The average number of hours of study for the directors is 7.89 hours. All Board members of the Company have complied with the training hours requirements as per the "Directions for the Implementation of Continuing Education for Directors and Supervisors of TWSE Listed and TPEX Listed Companies", with at least six hours of further training for each Board member. Related information is available on the Market Observation Post System (https://mops.twse.com.tw/mops/web/t93sc03_1).

Director and Manager Remuneration Structure

The remuneration of directors and all managers of the Company are handled in accordance with the "Guidelines for the Performance Evaluation and Remuneration of Directors and Managers" ratified by the Remuneration Committee and the Board of Directors. Board of Directors and managers shall be reasonably paid, taking into account the general level of payment of the industry, on top of the Company's operating performance, individual performance, and his/her contribution to the Company. The Company's standard salary structure, payment method, and salary adjustment mechanism are applicable to managers (including those who hold concurrent posts as directors), who, are also subject to annual performance appraisals which cover achievement of various financial goals and targets on various economic, environmental and social themes, of which the ratio of financial to non-financial goals is 7:3. The amount of salary adjustment and performance bonus of the current year is calculated according to the evaluation results vis-a-vis the general personnel, and the performance, salary adjustment, and annual bonus are all reported to the Remuneration Committee and the Board of Directors for discussion. The remaining employee remuneration and welfare protection are also in line with the general management's regulations. However, there are exceptions for the allocation of stock options and pensions for senior managers, where the distribution of warrants is reviewed by the Remuneration Committee, while pension is set out based on the coverage rate of the old pension mechanism and is controlled by the Pension Supervision Committee and an actuarial firm to protect the retirement rights and interest of senior managers as employees.

The Remuneration Committee and the Board of Directors shall regularly review the reasonableness of the remuneration, and shall review the remuneration system from time to time according to the actual operating conditions and relevant laws and regulations. They shall not guide the directors, presidents, and vice presidents to engage in acts beyond the Company's risk appetite in pursuit of remuneration, so as to avoid improper circumstances such as the Company suffering losses after payment of remuneration.

Legal Compliance and Internal Control and Internal Audit

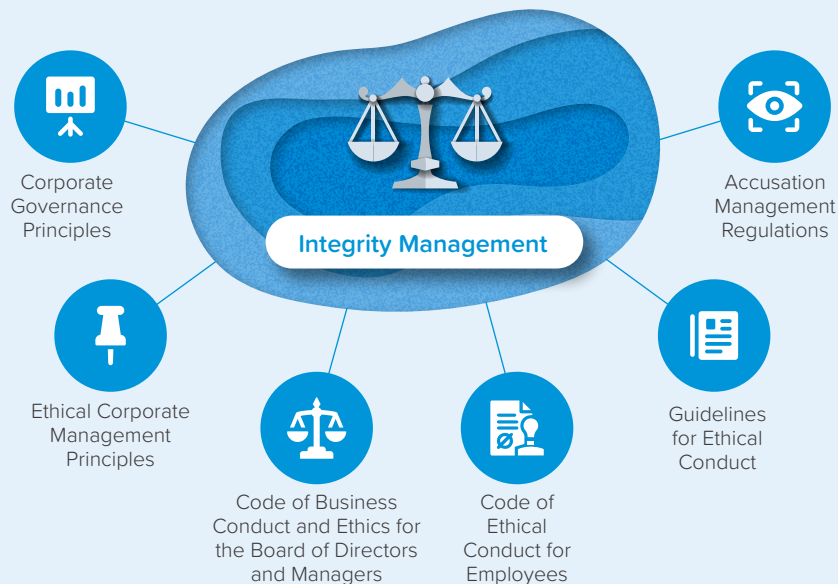
Professional Ethics and Legal Compliance

Based on the spirit of ethical corporate management, ECOVE has established basic standards of conduct to be observed for directors, managers, and general employees to ensure that their daily operations conform to corporate ethics and integrity. These include "Corporate Governance Principles", "Ethical Corporate Management Principles", "Code of Business Conduct and Ethics for the Board of Directors and Managers", "Code of Ethical Conduct for Employees", and "Guidelines for Ethical Conduct". Further, operational rules were formulated as the basis for compliance during day-to-day activities for all ECOVE's personnel. At the same time, with the intention of maintaining fair trade and preventing corruption and bribery, ECOVE strictly requires employees and related parties to conduct transactions without preferential treatment, and not to request, obtain, offer, accept favors such as gifts, entertainment, kickbacks, or bribes for themselves or people around them when performing their duties. Through the internal control system, relevant risks can be confirmed and mitigated for all operating sites. The "Code of Ethical Conduct for Employees" also prohibits our employees from influencing other employees in any way to make political contributions, support specific political parties or candidates, or participate in other political activities.

In order to continue to strengthen our integrity management practices, ECOVE organizes internal and external activities and training for all employees every year on issues related to integrity management. In 2021, there were two courses concerning corporate integrity management for all employees, with 1,733 participants and a total of 1,733 hours.



ECOVE's senior executives share courses on corporate integrity management in person



Corporate Governance Standard



Employee Operations Ethical Code of Conduct



Ethical Corporate Management Principles



Guidelines for Ethical Conduct



Code of Business Conduct for Directors and Managers



Accusation Management Regulations



In order to help ECOVE employees understand the various management regulations, all employees and new employees, regardless of position, were required to sign the "Employee Ethics Commitment" starting in 2020, with the sign-up rate reaching 100% in 2021. During the training of new recruits, the importance of ethical integrity has been explained to new recruits, and the ECOVE "Rules of Ethical Conduct", "No-Gift Policy", "Reporting Website" and other regulations and reporting mechanisms were also introduced. The corporate culture of "integrity" is also included in the annual employee performance evaluation index to deepen the link between ethical integrity and positive employee behavior, with the hope of deepening the corporate culture of "integrity" in the hearts of every employee. ECOVE also requires all affiliates and overseas companies to sign the "Confidentiality Commitment, Non-Competition and Intellectual Property Commitment". We did not engage in any bribery or corruption in 2021. The image of honest management has been recognized and acknowledged by our partners. All directors of the Board of Directors have also received courses related to the issue of honest management, and have been further educated on issues such as compliance with laws and regulations, interest avoidance, improper political contributions and donations, etc. The completion rate is 100%, so as to strengthen the concept of honest management at the governance level.

The business scope of the Company covers three major areas: incineration and electromechanical maintenance, renewable energy, and recycling and reuse, etc. We regularly review the latest changes in domestic and international laws and regulations, and strive to establish a culture of good compliance. In 2021, there were no legal actions involving anti-competitive, antitrust or monopolistic practices, failure to comply with information and labeling regulations for products and services, or violations of marketing (regulatory or voluntary guidelines).



Internal Control System

ECOVE's internal control system is designed by managers based on the FSC's "Regulations Governing Establishment of Internal Control Systems by Public Companies" and executed by the Board of Directors, managers, and employees upon approval of the Board of Directors. The purpose of the internal control system is to promote the healthy management of the Company, and to reasonably ensure the effectiveness and efficiency of operations, as well as reliability, timeliness, transparency, and legal compliance for information reporting.

ECOVE has an internal audit unit under the Board of Directors and a dedicated chief audit officer in place. The internal audit unit and the chief audit officer mutually assist the Board of Directors and managers to examine and review the defects in the internal control system and operating performance as well as provide recommendations for improvement in a timely manner along with the Audit Committee, so as to ensure that the internal control system can continue to be effectively implemented and as basis for review and improvement.

The Audit Department implements audit operations in accordance with the annual audit plan approved by the Board of Directors, discloses the missing and abnormal items found in the internal control system in the audit report, traces them after the report is submitted, and compiles tracking reports at least quarterly until the issue is solved to ensure that the relevant units have taken appropriate improvement measures in a timely manner. In addition to the monthly report on the implementation results of the audit plan to the Independent Directors and communicate individually with the independent directors on a quarterly basis regarding internal control and auditing matters, the audit supervisor also attends the Audit Committee and the Board meetings to submit an audit report to implement the audit results.

Whistleblower and Consultation Mechanism

ECOVE Establishes "Accusation Management Regulations. The Human Resources Department is responsible for accepting reports and making preliminary examination recommendations, sending them to the General Management Office for examination and processing the relevant investigations based on the examination results, in order to establish a smooth reporting channel and fair investigation procedures. A "Whistleblower Website" was set up on the "Employee Opinion Platform" and commissioned to be set up by a third-party impartial entity, Deloitte & Touche, to protect the rights of whistleblowers and to ensure that the cases are properly investigated and disposed of. If the Group's employees discover any internal misconduct that will have or is having an adverse impact on the Group and is detrimental to the rights and interests of all employees, they can make a report on this platform. External parties can also report through the platform on the official website of ECOVE (<https://www.reportnow.com.tw/ctci>).

Employees who need to inquire about the relevant rules may also contact their respective unit supervisors and at HR@ecove.com. Although we did not receive any whistleblower incidents nor complaints regarding ethical corporate management in 2021, ECOVE shall continue to stay true to the brand positioning of being the "Most Reliable" and continue to implement the integrity and ethical corporate norms.

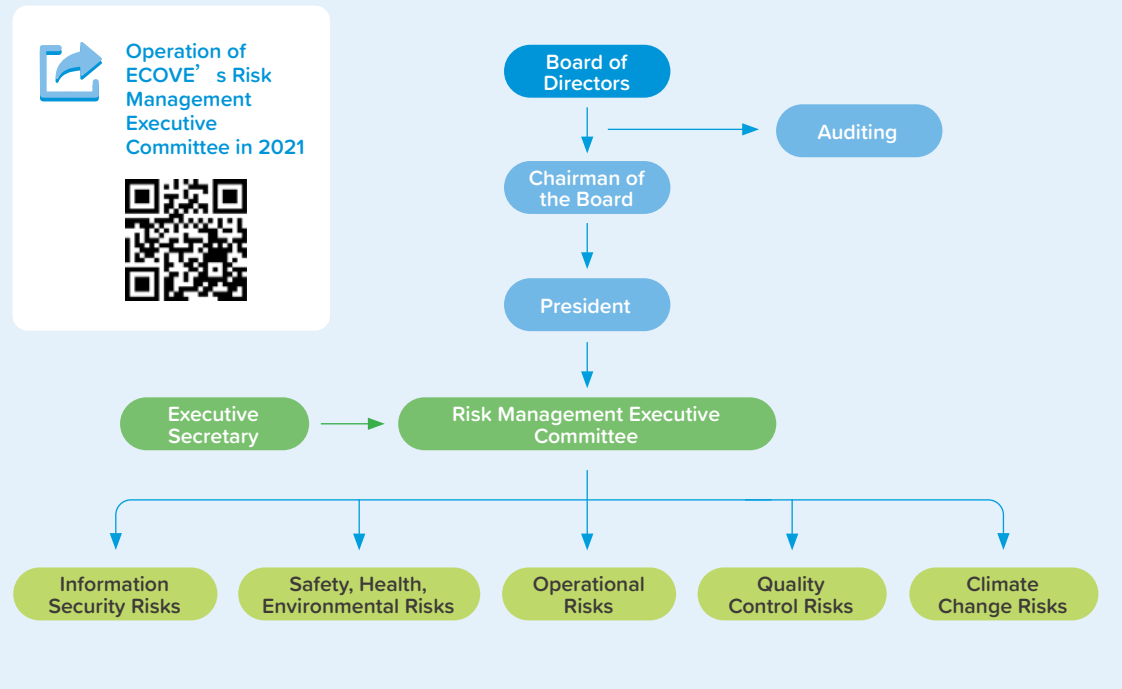
Risk Management

GRI 102-11, 102-15~17

With an eye toward strengthening the robustness of operations and competitiveness of ECOVE and its subsidiaries, and identify and assess possible risks during operations systematically, ECOVE released a Risk Management Regulations in 2017. A Risk Management Executive Committee comprising of the Board of Directors, Chairman, President, and Executive Secretary, was also established. Meetings are convened on the first and third quarters of the year to prioritize risk issues and propose control measures. The implementation of control measures is continuously monitored through audits, thus enabling the Board of Directors and managers to ensure that risks are controlled effectively. The Committee primarily manages the control of five types of risks, namely, information security risks, HSE risks, operational risks, quality management risks, and climate change risks. They all adopt effective actions to either manage the risks or take advantage of possible opportunities. In 2021, a total of 11 risks were identified in the risk management report. For example, environmental protection laws and regulations, costs, safety and health, manpower, the impact of the pandemic outbreak, and bidding Risk Post discussion, 67 action control measures were put forward. The action measures were all handled according to the regulations, so as to ensure that the risks were effectively controlled.

As an investment holdings company, ECOVE maintains control on various aspects of subsidiaries and requires subsidiaries to submit monthly operations reports, so as to review and analyze management strategies and risk management. The results of such reviews and analysis are compiled into treatment principles or recommendations for amendments, and will be approved by responsible managers and the Chairman before being carried out by subsidiaries. In addition, with the object of maintaining a stable operation, related supervision processes were conducted, based on the characteristics of industries on all subsidiaries that ECOVE has invested in.

Risk Management Executive Committee organization chart



Scope of risk considerations





Information Security

Insisting on protecting customers' intellectual assets, ECOVE strengthens the reliability and quality of project execution to enhance customer trust. Through a sound information security management system, regular security risk assessments, and information security management mechanisms, we take the initiative in identifying and reducing information security risks in compliance with owners' requirements or legal requirements such as the Trade Secrets Act, Personal Data Protection Act, and Cyber Security Management Act, so as to improve the quality of information security management in all aspects.

INFORMATION SECURITY MANAGEMENT SYSTEM

ECOVE understands the constant need to refine the flow of Plan-Do-Check-Act (PDCA) in the process of managing information security risks. The promotion and implementation of information security management, regular reviews, and timely updates not only support the sustainable operation and development of the Group's business, but also lay the foundation in a new era for ECOVE's IT.

To that end, ECOVE referenced the essence in ISO/IEC 27001 to formulate the "Information Security Management Regulations", standardize the Company's information security management system to ensure the confidentiality, integrity, and availability of information under the purview of the Company, thus protecting the rights and interests of the company and all personnel. As per the provisions in the "Risk Management Regulations", the "Risk Management Executive Committee" serves as the highest management unit for information security. Under the direction of the committee, the information service center shall be responsible for submitting the "information security management report" on the implementation results and effectiveness of social engineering drills, anti-virus system, firewall, email filtering system, and email audit system on a regular basis. The relevant contents are consolidated in the "Risk Management Committee Report" and the annual report and plans are presented to the Board of Directors in the fourth quarter of each year.

INFORMATION SECURITY RISK IDENTIFICATION

To proactively identify possible risks to information security, we conducted an annual risk assessment exercise to analyze key items from a combination of potential threats and vulnerabilities, including:

- Scam syndicates using fake e-mail messages to trick employees of the Company into remittances or transactions, or providing personal information.
- Industrial spies or competitors used hacking technology to continuously penetrate the internal host and steal corporate information.
- The criminal gang and hackers distributed content with malicious links through e-mail, SMS, social networking software, and communication software, to deceive employees or demand high ransom via encryption ransomware.
- Hackers initiated a large number of connection requests through the Internet to block the Company's normal network operation.
- Employees used illegal software or copied the Company's sensitive data to a portable storage device, causing data leaks due to loss, theft or sale of the device.
- Natural disasters and human disasters caused damage to information software and hardware, resulting in service interruption or data loss.

With regard to information security risks, ECOVE adopted a multi-prong approach to reinforce information security management mechanisms designed for reducing threats and managing risks, by applying information security management guidelines, introducing technological solutions, and stepping up information security education and training. Key measures include:



Key Information Security Management Mechanisms

- For hard disks in obsolete computers, special drive eraser (U.S. Department of Defense DoD 5200.22 standard) is used to prevent individuals with ill-intent from tracing or restoring, or manually dismantling and destroying the records of the hard drives.
- Continuously conduct social engineering attack simulation drills and provide information security education and training to enhance employees' awareness of email protection.
- Installation of supervision software on client end to block the connection of USB storage devices and to revoke permission to self-install software.
- Anti-virus software is installed on each server and personal computer to automatically and regularly scan the computers, so as to ensure their security.
- Installation of anti-virus and spam filter software on email gateways to reduce the risk of emails being attacked.
- Protect the confidentiality of documents through smart document management system and disk encryption technologies.
- Set up "social engineering attack prevention advocacy" website and "scam mail notification mailbox" to reduce the risk of being attacked.
- Regularly conduct internal/external audits to serve as a basis for improving the operation of the information security system on top of refining the operation of the information security management system.
- To avoid disruptions to operations due to the pandemic outbreak, an actual work-from-home exercise, lasting four weeks in two batches (rotation of two groups of personnel, Group A/B), was conducted in April 2020.
- In response to the Level 3 pandemic alert, the pandemic prevention work from home began on May 15, 2021, with the activation of remote encrypted connection (SLL VPN), promotion of video/web conferencing, mobile app "myCTCI" for health management and attendance clocking, etc. From July 26 of the same year, the office work of all staff resumed, and the remote connection (SLL VPN) was cancelled, but video/web conferencing was continued and arranged as much as possible to reduce the gathering of staff and maintain social distance. The aforementioned authorization to enable remote encrypted connection (SLL VPN) is provided by the Department of Human Resources and Administrative Services, and the list of personnel and the period of opening is based on the latest approved personnel list provided by the Department of Human Resources and Administration in case of rotation of A/B personnel or case changes. Firewall authority setting is performed by the Cost and Information Management Department.
- New information security joint prevention measures have been added and was relocated to the second headquarters on August 1, 2021. The new building's server room was upgraded with a new firewall and supporting anti-virus software, requiring that when a user computer connects to the internal network, it must first check if it is a computer in the Company's domain and has the specified anti-virus software installed, otherwise the connection will be refused.



In order to raise employees' awareness of information security, in 2021, information security-related professional courses were attended by a sub-total of 33 information-related employees. A sub-total of 40 general employees with medium/high risk in the quarterly social engineering exercises attended the "Understanding Social Engineering Attacks and Information Security Priorities" course. The total training for the abovementioned information security-related education and training was provided for a total of 73 participants, bolstering the awareness of information security and defense capabilities. Please refer to the following table for related statistics.

In addition, the Company also requires employees trained on the aforementioned "Understanding Social Engineering Attacks and Information Security Priorities" to submit a training experience report of 500 words or more since the second quarter of 2021. Employees who have been trained continuously or for the second time in the third quarter of the same year were required to be interviewed by the President and submit an interview report of 500 words or more, in order to continuously strengthen and improve employees' awareness of information security risks.

Trainee	Courses	Number of Trainees	Course Hours	Training Completion Rate	Note
Information personnel	IT Security Awareness Basic Training Class Information Security Promotion (Basic)	5	1	100%	
Information personnel	IT Security Awareness Training-Information Security Promotion (Basic)	21	1	100%	Open to colleagues
Information personnel	Information Security Training - ISO 27001 Information Security Management and Implementation	1	1	100%	Information Supervisor
Information personnel	Introduction to Network Service - IT Network Management (Basic)	6	1	100%	Network Management Colleagues
Specific General Colleagues	"IT Security Awareness Training Class-Understand Social Engineering attacks and information security key issues propaganda" 2021 Q1	16	1	100%	Social Engineering Exercises Medium/high risk individuals
	The course as above 2021 Q2	7	1	100%	
	The course as above 2021 Q3	5	1	100%	
	The course as above 2021 Q4	12	1	100%	

Note : Medium risk : Those who click on the link in the scam email
 High risk : Those who click on the link in the scam email and enter their own account and password.

INFORMATION SECURITY MANAGEMENT MECHANISMS

In 2012, the remote backup operation was adjusted and relocated from Taipei Neihu office to the Taichung Wujih plant as per the suggestion of ECOVE's independent director to take reference from "Recommendation of 2003 National Information & Communication Security Taskforce of the Executive Yuan states that the distance between the main server room and the remote backup server room should be more than 30 km". In 2013, in accordance with the notice from the Audit Office, the "Personal Data Protection Regulation" was updated with relevant response measures and management mechanisms, such as using special drive eraser when hard disks are being scrapped to prevent data leakage. By the same token, in 2017, social engineering drills were rolled out, and based on the results, those with mid to high levels of risks were subjected to education and training to reinforce their awareness of information security.

ECOVE continues to invest in information security operations. In 2021, we invested NT\$10.85 million per year in information security-related hardware, software and service rental, including strengthening security infrastructure, upgrading anti-virus software, and improving the information security management system and security training in hopes of enhancing our information security capacity in aspects from management to technology.

Owing to the fact that spates of ransomware virus have caused severe damage to well-known companies in recent years, a "social engineering attack prevention advocacy" website and a "scam mail notification mailbox" have been specially set up to assist personnel in the identification and mitigation of scam emails/phishing emails, or more precisely, Business Email Compromise (BEC) attack risks. Based on information security risk considerations, we have invested approximately NT\$3.435 million in the second half of 2021 to fully inventory and replace old servers (OS Win2003/2008) and outdated working hours systems, and made this operation an annual routine. With the aim of effectively apportion the losses caused by information security risks, we also took up an "electronic equipment comprehensive insurance", which is an information security-related insurance policy, at a total premium of more than NT\$49.89 million.

In 2021, there were 0 information security incidents such as virus attacks (excluding 2 cases of automatic removal or 3 cases of automatic quarantine by the antivirus system) through the alerts of the antivirus software. Therefore, we specially asked our third-party vendors to conduct virus simulation tests on the antivirus software in November 2021 to verify and confirm the effectiveness of the antivirus software.

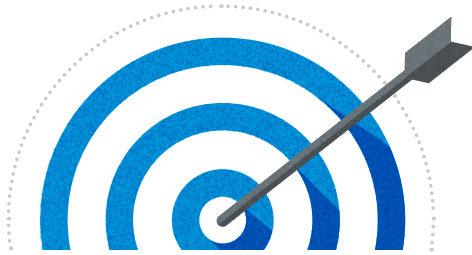
According to the "Information Security Management Regulations", if personnel detect computer virus intrusion or other malware, they should notify either the information center or the computer management personnel of the unit for actions. In practice, the information service center will proactively intervene as soon as it receives the alert from the anti-virus system (the system cannot automatically clear or failure of quarantine), so as to avoid situations where individual personnel ignoring the alerts from the anti-virus system. In 2021, there were 0 warnings or notifications of virus attack incidents, 2 automatic removals, and 3 automatic quarantine. The aforementioned incidents did not cause any data loss or customer loss. To date, no information security incidents affecting the normal operation of internal information systems and information-related facilities have occurred. In the future, we will continue to refine and review the relevant processes to comprehensively improve information security management to meet the international quality requirements.

Based on respective responsibilities, personnel from the information service center have set different items and goals, such as computer infections within the domain, number of high-risk individuals based on social engineering drills, information security visits, information security checks, etc. in the "2021 KPI performance objectives and scoring method", ensuring the implementation of various information security measures.

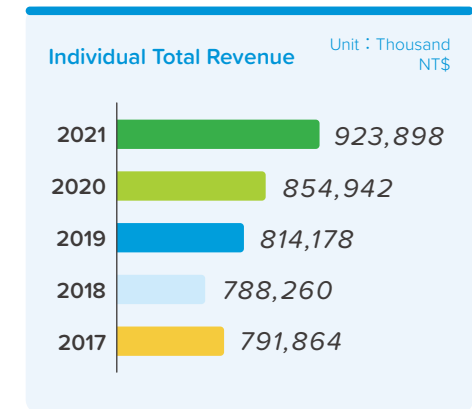
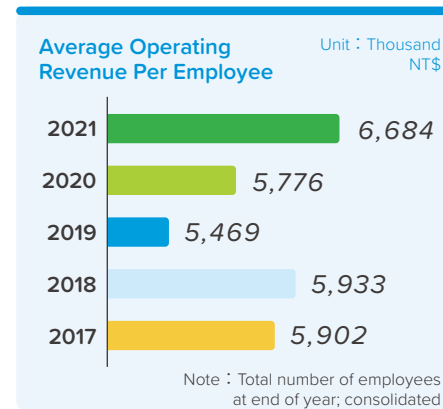
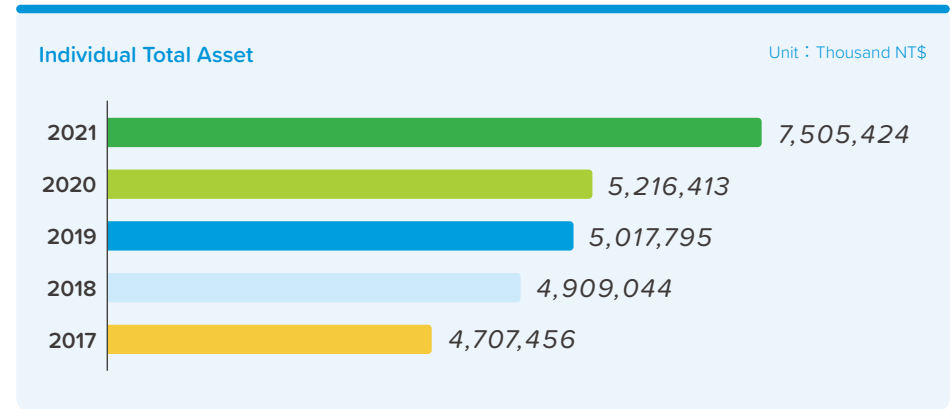
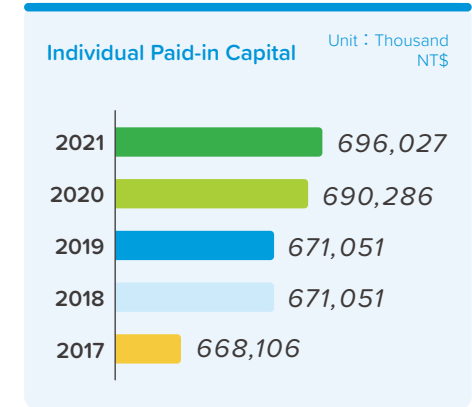
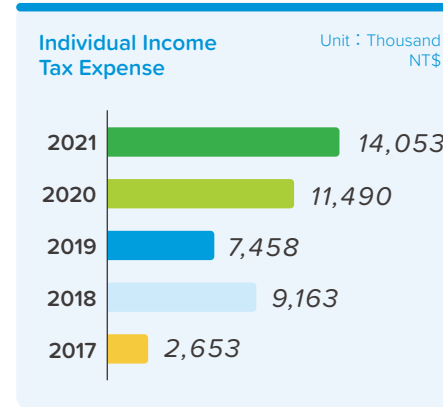
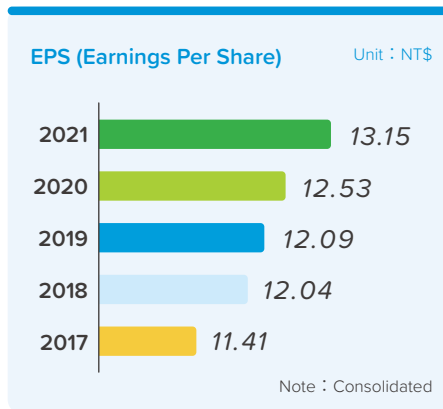
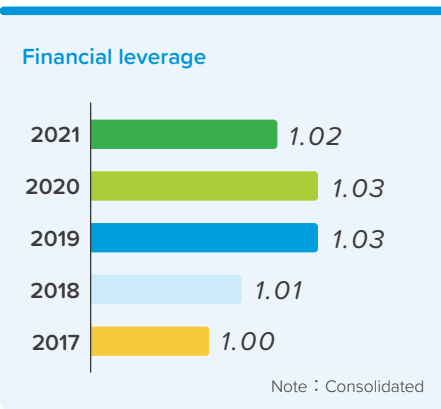
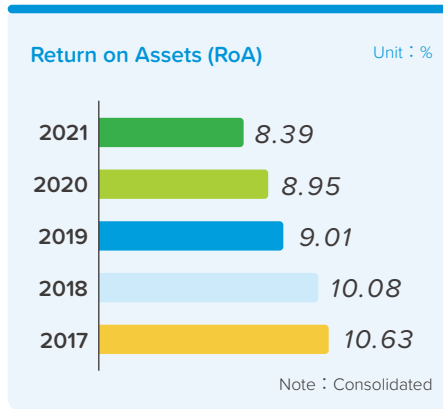


Management Performance and Industry Outlook

GRI 102-15, 102-45, 201-1



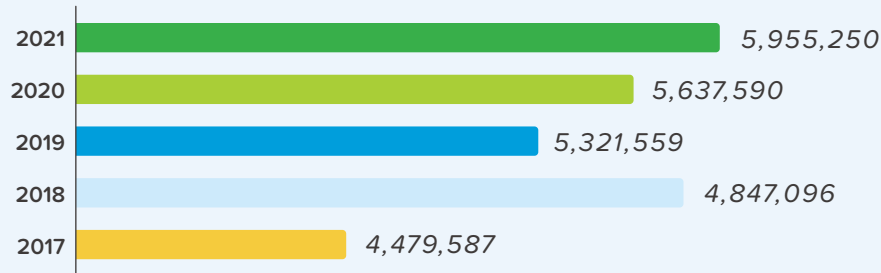
Management Performance





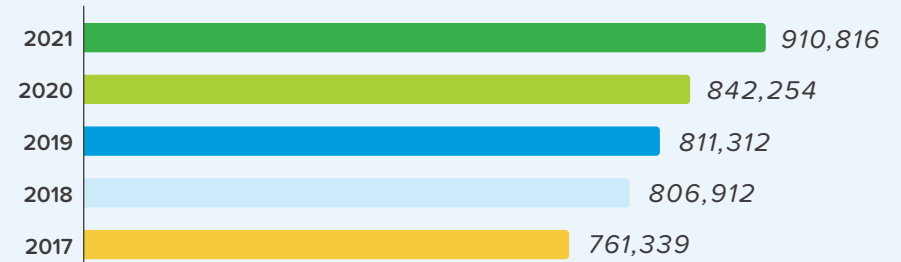
Consolidated Total Revenue

Unit : Thousand NT\$



Individual Income After Tax

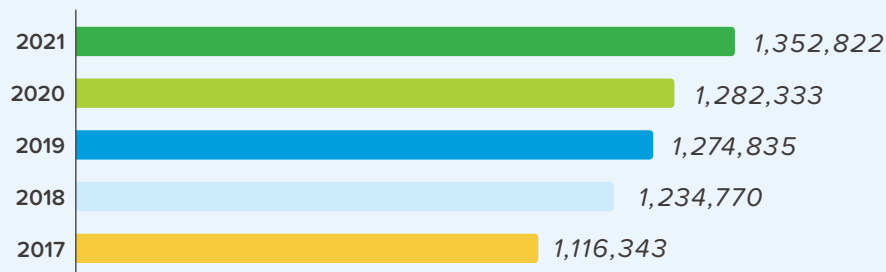
Unit : Thousand NT\$



Note : Net income attributable to owners of the parent company

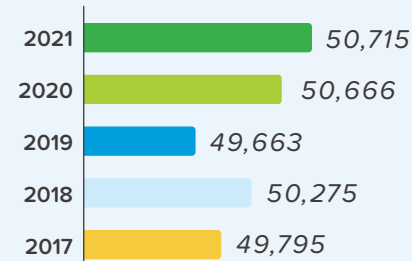
Consolidated Income Before Tax

Unit : Thousand NT\$



Individual Operating Expense

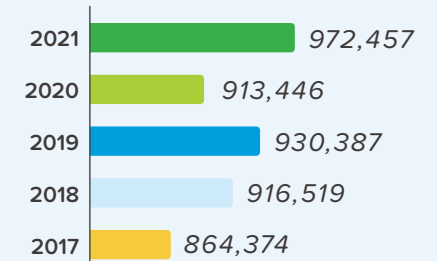
Unit : Thousand NT\$



Note : Operating cost + operating expense

Consolidated Total Salaries

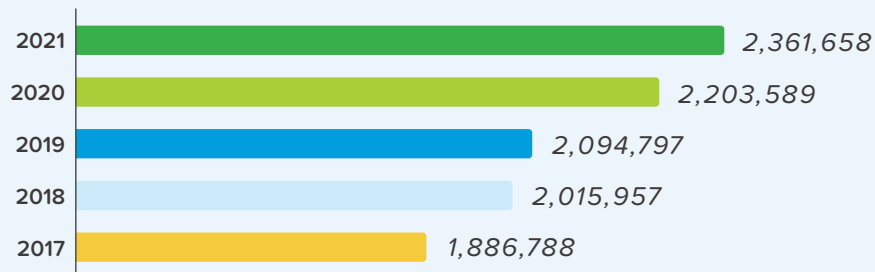
Unit : Thousand NT\$



Note : Consolidated

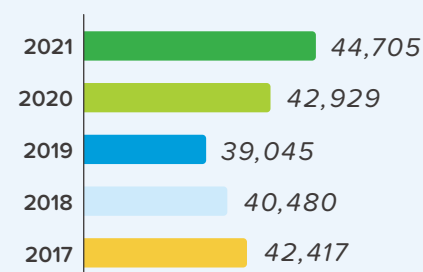
Individual Retained Earning

Unit : Thousand NT\$



Total Individual Employee Benefits

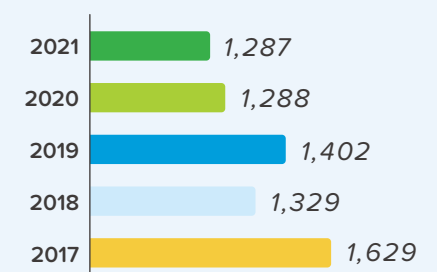
Unit : Thousand NT\$



Note : Parent company only

Total pension

Unit : Thousand NT\$



Note : Parent company only



Industry Outlook

In 2021, ECOVE shall continue to integrate SDGs into business activities, develop the domestic market while expanding overseas networks, and strive to secure more project collaboration opportunities. In readiness for the market trends in circular economy, ECOVE is actively seeking for waste that can be recycled to enhance the ‘resource cycling’

efficiency™. In the future, we will continuously expand the scope of business based on our core competencies in the fields of incineration and electromechanical maintenance, renewable energy, and recycling, showing the world Taiwan’s resource cycling technology and strength.



Incineration and electromechanical maintenance

In Taiwan, large incinerators are facing the problems of age and inefficiency, and the service life of incineration plants is being extended through renovation. The Company will relentlessly secure business opportunities for large-scale integrated treatment facilities tenders and the rectification and operation of the extension of existing incineration plants. While in overseas, the Company will sign cooperation agreements with local advantageous partners, and select the right subject in advance to emulate the successful model of public-private partnership (PPP) in BOT projects for incinerators and sophisticated operation and maintenance (O&M) capabilities overseas as it advances towards ASEAN, India, and Mainland China markets.



Opportunities

As the amount of waste in Taiwan is increasing year by year, with the government promoting the "multi-waste treatment plan" policy in 2017, the resourcefulness of waste and the enhancement of incineration plant treatment capacity have been given much attention. Through renovation, upgrading and preparation, the introduction of new technologies from abroad or the construction of multi-treatment facilities for planning and design, the Company is able to continue to promote the related technology through the feedback and refinement of the experience of Taoyuan Biomass Plant (the first large-scale incineration plant that passed the renewable energy development regulations).



Risks

The volume of waste in Taiwan is increasing year by year. In recent years, the landfills for utility waste are becoming saturated, so general utility waste is transferred to municipal waste incinerators for disposal. Under the pressure of high waste treatment, incineration of high calorific value business waste will compress the waste treatment capacity and affect the efficiency of power generation, as well as easily cause damage to equipment and air pollution, resulting in an increased demand for treatment chemicals and an unmitigated waste crisis.



Renewable energy

We actively work in line with the government’s non-nuclear and green energy policy and prudently select investment targets. We zero in on small and medium-sized public projects and carefully assess the opportunities arising from the large-scale public and private projects.



Opportunities

The support of the government’s energy transformation policy and the continuous inventory release of space available for the installation of solar power generation systems, the return of Taiwan businesses, the terms of heavy power users kicking in and the demand for green energy from green supply chain manufacturers are favorable for the development of the solar power industry and the green power trading market, thus increasing revenues and profits.



Risks

The global supply chain has been affected by the pandemic and the price of raw materials has risen sharply. The shortage of labor and materials has affected the progress of project development and implementation, causing a significant impact on the construction schedule and expected revenue of solar energy companies. The cost should be reflected in the bargaining rate increase by the Energy Bureau to maintain a reasonable profit.

The emergence of inflationary alerts will have the effect of rising interest rates, increasing investment risks and causing the cost of capital to rise, which in turn exert an impact on the investment efficiency.



Recycle and Reuse

The factory equipment is affected by the large-scale and high-standard trend, attracting large state-owned enterprises to invest, and the Company will bring in BoReTech Co., Limited system and equipment to attract business opportunities. We will continuously develop other substances for recycling, including waste solvents and kitchen waste or animal manure used to make fertilizers for flowers and trees for ornamental use, and continue wastewater treatment to realize circular economy. Besides the existing polyester recycling for remaking fibers, ECOVE will also evaluate pioneers in circular economy in Taiwan to seek for partnership opportunities in areas such as biomass power generation.



Opportunities

Government policies, industry economy, or CSR incentives

The government’s promotion of renewable energy has led power acquisition prices to increase, thereby increasing the financial feasibility of renewable energy projects. The industry’s adoption of renewable materials in implementing CSR will also lower production cost.



Risks

Recycling material clearing

The recycling and reuse industry is heavily reliant on transportation. It is expected that the government may gradually increase the waste gas emission standards from transportation vehicles in response to climate change, thus increasing the procurement cost for clearing machinery.

Recycle and Reuse

With the aim of avoiding secondary environmental pollution due to recycling processes, the government may gradually raise the standards for waste emission, hence inducing the simultaneous increase in capital investments for plants and control equipment. Furthermore, the standards for recycled products may progressively increase, resulting in the need to relentlessly pump in resources into R&D and investment costs.

Innovation and Supply Chain

ECOVE is Taiwan's first investment holding company with resource cycling as its main business scope. We dedicate efforts to technological innovation along with aggressive research and development of patents, working closely with the government, enterprises, and communities over the years. We uphold the corporate culture of "Most Reliable" to provide excellent product and service quality. In addition, we forge positive partnerships with suppliers. While pursuing sustainable operation, we also built a sustainable supply chain that co-exist and co-prosper through cooperation with suppliers.

Development, Integration and Application of New Technologies

In response to the world trend of carbon neutrality, ECOVE has expanded its new technology development to include carbon dioxide emission reduction and recycling (e.g. flue gas carbon capture to produce sodium bicarbonate, etc.), and has continued to pursue the optimization of final disposal for the Group's core business areas of incineration, recycling and solar energy (e.g. elevating the power generation efficiency of incinerator, integration of new incineration technologies, denitrification of exhaust gas reflux, superalloy furnace tube coating technologies, fly ash washing, fixed shock wave ash cleaning, methane residual pressure recovery, etc.), the increase of recycling rate of waste resources (e.g. Reclaimed water, sorting before trashing, waste solvent purification, biomass green energy biogas center, gasification, cracking and syngas power generation, etc.), the elevation of the added value of waste resources (e.g. extraction of base oil from waste engine oil, high value of regenerated isopropyl alcohol, etc.), the elevation of the efficiency of energy generation (such as improving the efficiency of solar power generation, suppression of sinter on side of the boiler grate and waste-heat recovery system, investigation and adoption of generators with optimal generation efficiency, solar wind power generation devices, etc.), and introduction of multiple applications for energy storage systems.

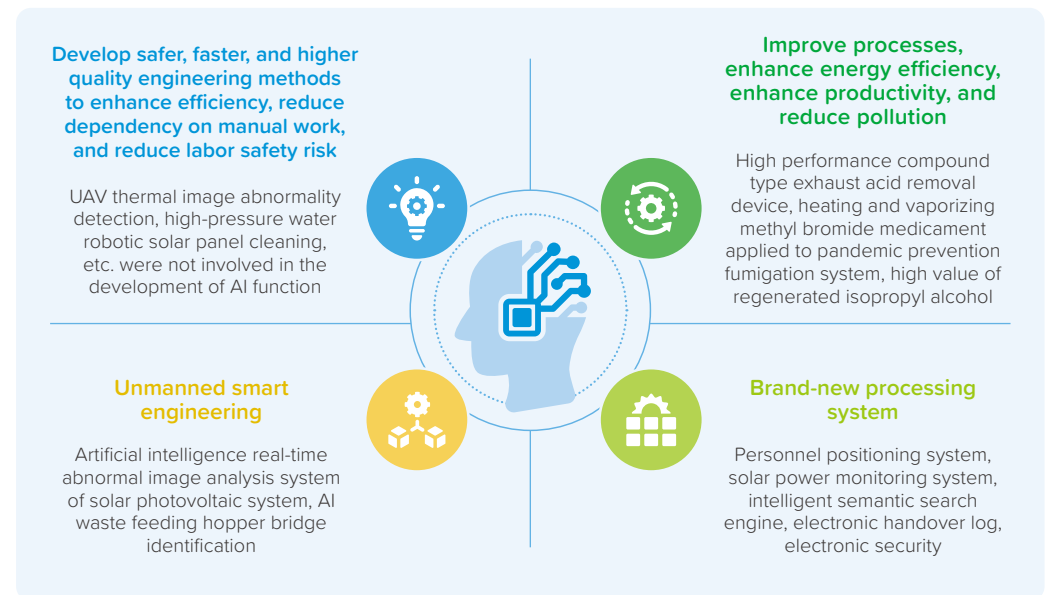
In the recycling of waste isopropanol in the semi-conductor industry, with the goal of recycling back to the original semiconductor process, ECOVE Solvent Recycling Corporation has established a pilot plant for the high-value recycling of isopropanol, taking a new step towards the goal of resource recycling, and furthermore, through the development of high-value recycling technology for recycled resources, indirectly reducing the use of traditional fossil fuels and increasing its contribution to global carbon neutrality.

In terms of carbon dioxide emission reduction, in order to effectively reduce the carbon dioxide emission from the flue gas of incineration plants, carbon capture technology with proven track record is the best choice. We are cooperating to develop carbon dioxide capture and reuse technology in order to achieve the goal of carbon neutrality as soon as possible.

Development of Intelligent Management Tools

In response to the trend of digital transformation of global enterprises, ECOVE has strived to develop intelligent solutions to management, control, and maintenance technologies and has incorporated more advanced management tools (e.g., remote control room, emergency repair incident inspection, high-temperature camera for furnace inspection, advanced combustion control system, robotic slag removal in boiler, shock wave ash removal, employee safety positioning system, solar power cloud monitoring system, solar power system UAV aerial thermal imaging anomaly detection, intelligent semantic search engine, digital twins operating procedures assistant, electronic inspection, electronic handover log, unmanned plants, electronic security, electronic fencing, high-pressure water column robot arm solar panel cleaning and AI waste feeding hopper bridge identification, etc.). The Important Operation Index (IOI), such as operational performance, emission monitoring, anomalies in key equipment, and on-site inspection data, etc., of each plant can also be assessed anytime and anywhere via mobile devices (ECOVE Environment Service Corp. IOI system mobile site, LINE notification platform). This enables real-time insights into the status of the plants and raises the efficiency of operation management. On top of that, it also improves the effectiveness of employee training and education (e.g., 3D models virtual reality (VR) training, guiding, and teaching).

ECOVE continues to refine intelligent management and maintenance measures at solar power sites. In 2021, ECOVE integrated UAV thermal image abnormality detection by solar system drones and new integrated application of high-pressure water robotic solar panel cleaning technology at the 180 MW large-scale solar power site to complete abnormal inspection and repair operations and regular system cleaning and important maintenance measures in the most economical and efficient way, effectively maintaining the efficiency of solar power generation.



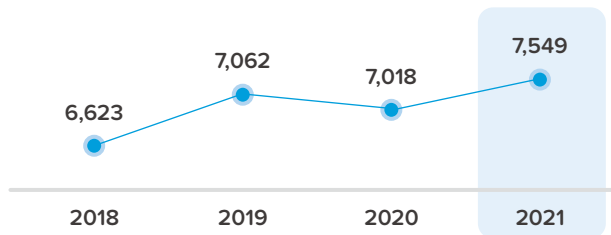


R&D RESULTS - PROPRIETARY TECHNOLOGY

ECOVE encourages innovation and strives to develop new technologies. Our R&D budget has progressively increased in the past few years. Besides elevating the management efficiency, the application of new technologies can also bring new business opportunities.

R&D Expenses Over the Years

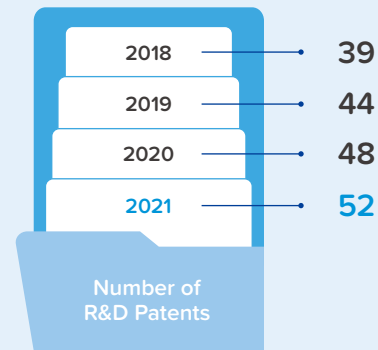
Unit: NT\$,1,000



Note : R&D expenses are the labor expenditures incurred by the Research and Development Center for the development of new technologies and systems; the cost of each new technology or new system or the cost of integration with other project systems is attributed to the cost of each project.

ECOVE attaches great importance to the management of intellectual property rights, and relevant patent operations are handled in accordance with standard operating procedures. An incentive system has been established to encourage innovation among colleagues. After the patent certificate is issued, the patent certificate and a public report are published on the Company's website. The core content and usage are briefly explained in the regular meetings of the supervisors. In 2021, ECOVE obtained four new patents, including "Waste Solvent Purification and Separation System", "Multi-Axis Unmanned Water Quality Inspection and Sampling Device", "Multi-Containment Feeding System for Fluffy Substances and Sludge", and "Optimized Arrangement of Rolling and Unwinding Mechanism", and has obtained 41 patents in Taiwan and 11 patents in Mainland China by the end of 2021. The vast majority of the patented technology is actually used in our operations. ECOVE also focuses on the sustainable development of the environment and the promotion of OSH. Among the R&D results, 31 patented technologies can reduce the load of environmental pollution due to the effective improvement of incinerator operation, waste gas treatment and recycling efficiency, thus having a competitive niche and can improve operational efficiency.

Number of R&D Patents in the past four years



R&D Benefits

- Reduce environmental pollution
- Enhance processing efficiency
- Reduce workplace hazard

Number of R&D Patents

Mainland China: 11

Taiwan: 41

Competitive Niche of R&D Patents

31 patented technologies which can reduce environmental pollution load

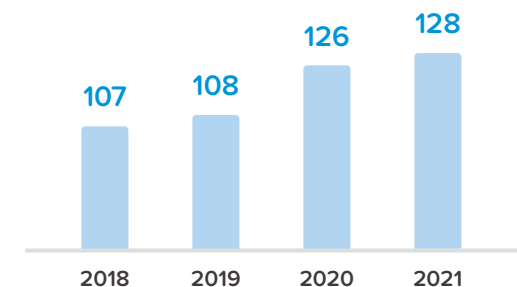
Service Quality

ECOVE provides diversified services with professional technology and the spirit of excellence, and looks forward to becoming the best support and partner of customers. We also serve our customers with the spirit of sustainable operation. In addition to providing customers with diverse and smooth communication channels, every six months we also send questionnaires using registered mail to the responsible contact person and supervisors of on-going projects to conduct visits and get their opinions. Given the relevant suggestions from customers, with a robust operating process to manage customers' suggestions, we closed the feedback loop with customers in a timely manner and require the execution units to carefully and accurately analyze the cause of the problem, propose improvement plans and procedures, and comprehensively improve the customer service quality. In 2021, there were 21 customer suggestions which were mainly compliments on the execution of projects by our staff. For two projects, the customer suggested that communication should be strengthened, and the project staff were informed internally and improvements were made. The Company had no customer complaints or violations of customer privacy in 2021.

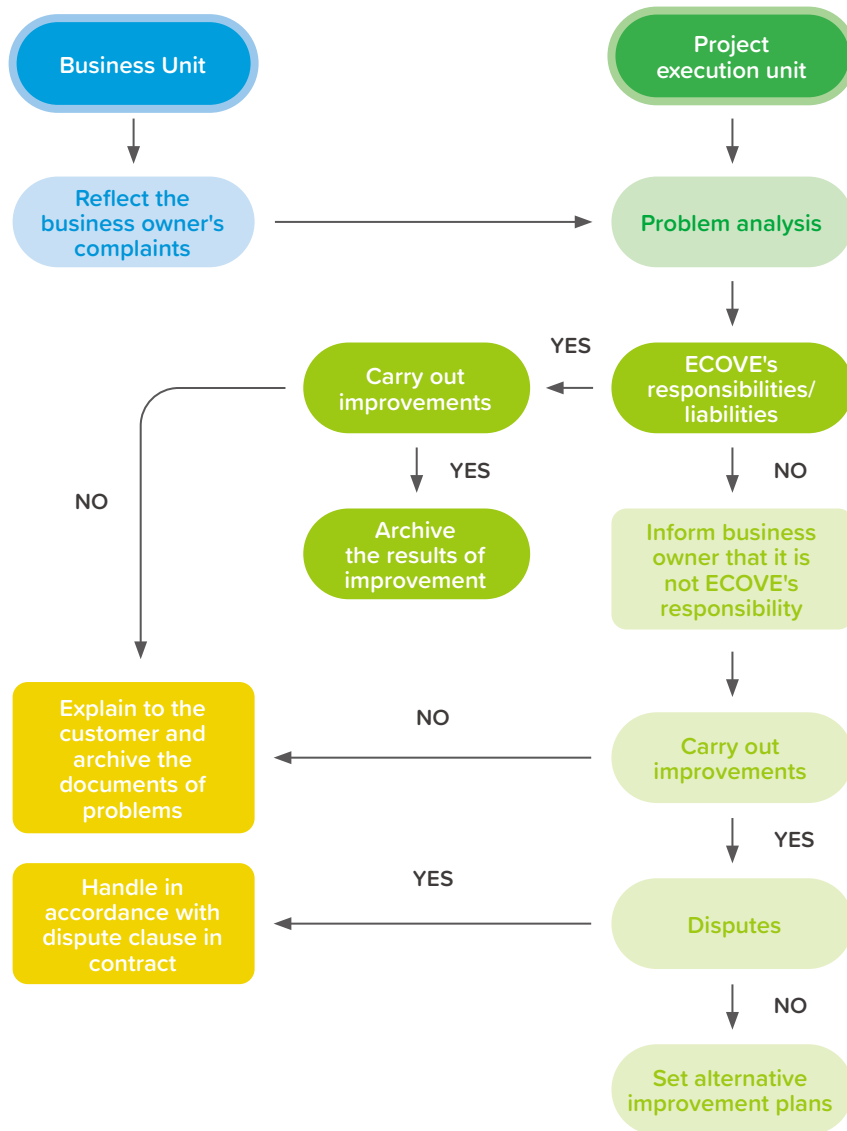
Customer suggestion channel

Telephone	(02) 2162-1689
E-mail	sales@ecove.com
Fax	(02) 2162-1681
Questionnaire	Questionnaires are disseminated to all customers (owners)

Number of customer surveys for the past four years



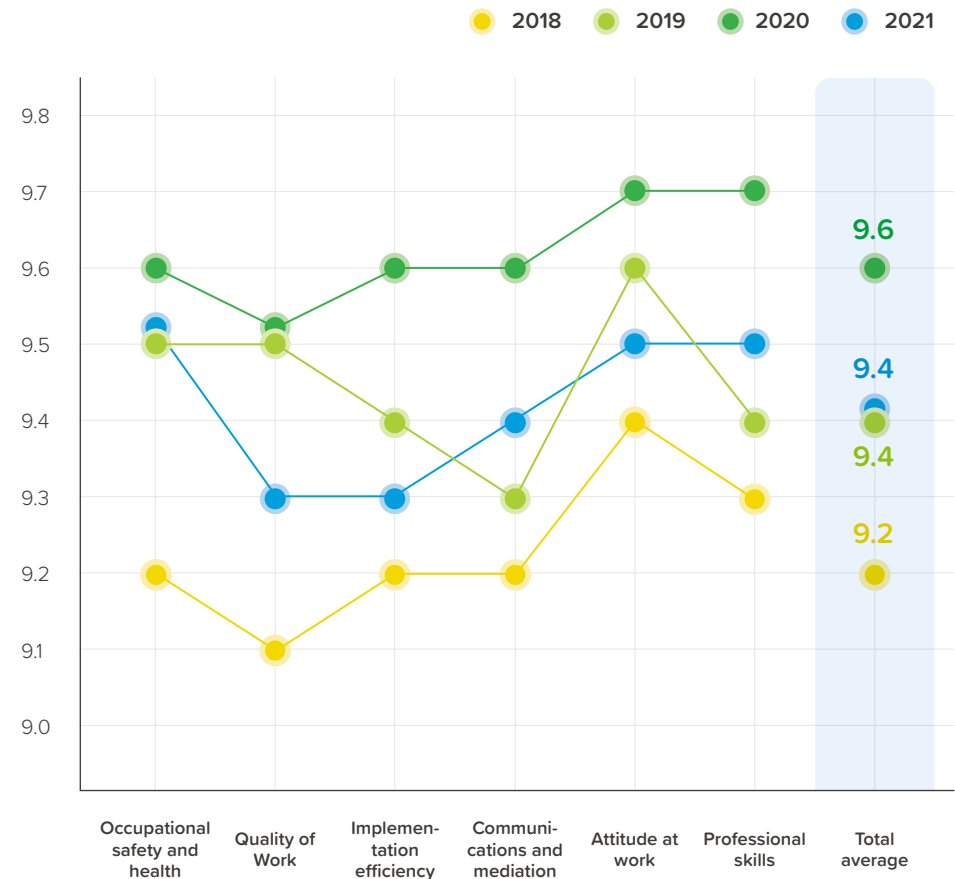
Workflow of customer (owner) suggestion



Surveys of customer satisfaction

To ensure that our service quality can satisfy customers' expectations and requirements, we carry out the customer satisfaction survey every year as a basis for improvement in service quality. The customer satisfaction survey includes six major categories, namely, occupational safety and health, quality of work, implementation efficiency, communication and mediation, attitude at work, and professional skills. In 2021, we received an average score of 9.4 points out of 10. In the future, we will continue to improve, and we will see a total average score of 9 points as the minimum in order to provide even better quality and well-rounded service.

Customer satisfaction survey results for the past four year





Sustainable Supply Chain Management

With the vision of "The most reliable provider of industry-leading 'resource cycling' services", ECOVE, as Taiwan's largest environmental resource management company, plays an important role in helping supply chain vendors to move towards sustainability by promoting and implementing sustainable supply chain management, so as to cope with future risks and opportunities, and enhance their sustainability.

Overview of supply chain

Cumulative number Supplier category	2018	2019	2020	2021
Materials suppliers (Inclusive of chemicals, consumables, etc.)	554	593	625	720
Engineering contractors (Provision of professional services, such as annual maintenance, emergency repair, equipment maintenance, etc.)	393	414	431	480
Labor contractors (Provision of professional services, such as manpower, etc.)	72	74	76	82
Total	1,019	1,081	1,132	1,282

Note: Cumulative number of suppliers are counted based on suppliers whose cumulative transaction amounts have reached NT\$300,000 or more under the parent company's authorization rights for the current year. Transaction amounts from contractors who meet this condition account for 98% of annual transactions, and the rest 2% are transactions that have not met the designated threshold.

Sustainable supply chain development strategy

In accordance with the sustainable development strategy of the supply chain of the Group's parent company, CTCI, ECOVE has invited suppliers to join us in our sustainable development strategy in the four aspects of "zero tolerance for unethical conduct", "full protection of employee rights", "safety first", and "local procurement". We manage vendors' information through the supplier and sub-contractor section of CTCI and also provide a whistleblowing platform, thereby establishing a comprehensive communication mechanism.

Zero tolerance for unethical conduct

ECOVE is focused on the ethical management of suppliers. We refer to the list of sanctioned suppliers on the government's e-procurement website on a quarterly basis. Should a supplier is found to be in violation of the procurement law and suspended, the same punishment shall be meted out. To ensure integrity, honesty and sustainable operation, currently, we have commissioned a neutral third party, Deloitte Taiwan, to establish and manage the reporting website. If any vendor is found to be involved in any unfair or unjust action, or handle the practice inappropriately, or in violation of laws, regulations, and professional principals, the case can be directly reported via the website. There were no reports filed in 2021.

Full protection of employee rights

ECOVE values the employee rights of our suppliers. We stipulated that for contractors to commence work on site in Taiwan, their employees must be covered by labor insurance while those based overseas must comply with local regulations before they can commence work on site. Contractors are also required to purchase liability insurance for construction projects to protect the rights of both our employees and contractors' employees.

Safety first

ECOVE is focused on the HSE conditions of each workplace. Besides requiring subcontractors working on site to conform to HSE regulations, we also communicate with suppliers and partners on ECOVE's HSE policies to enable them to fully appreciate and implement the HSE requirements so as to create together a safe and healthy workplace. When entering construction sites every day, contractors convene a safety awareness meeting before commencing work.

Local procurement

If the items that need to be purchased and the vendors that provide services can be sourced locally, they will not be procured from elsewhere. By doing this, we expect to reduce energy consumption and carbon footprints arising from transportation while creating job opportunities that benefit local employment.

Sustainable supply chain development policy

Supplier / Contractor Social Responsibility Policy

ECOVE believes that the consensus and cooperation of the overall supply chain on sustainable development is the key to spur the overall industrial environment towards sustainability. Therefore, ECOVE continuously requires suppliers and contractors to fully comply with all relevant local laws and regulations, and we have formulated the "Supplier/Contractor Social Responsibility Policy", requesting the supply chain to understand and comply with relevant social responsibilities. We have always been advocating and requesting for the prohibition of child labor, protection of human rights, non-discrimination, fair treatment, legal working hours and wages, and friendly environmental management, among other issues. As for the requirement for labor rights, environmental protection, safety and health risk control on our supply chain, we adopt various measures to facilitate the suppliers and contractors to improve and to enhance service quality and management standards. This helps to reduce the management risks and operating costs of ECOVE, suppliers, and contractors, and thereby forging solid, reliable partnerships that promote sustainable growth.



Supply Chain Code of Conduct

ECOVE is committed to the promotion of CSR and the development of partnerships. We established the "Supplier Code of Conduct" by referencing the essence of human rights, labor standards, environmental regulations, and anti-corruption regulations under the UN Global Compact, Universal Declaration of Human Rights, and The UN Framework and Guiding Principles on Business and Human Rights. The code is applicable to all suppliers providing ECOVE with goods or services and their subsidiaries, affiliated enterprises, and contractors, etc., where all of their business activities shall be in full compliance with the code and the laws and regulations of the place where they are located.

● ECOVE's Supplier Code of Conduct



Strengthening ethical business conduct

In response to the Group's efforts to strengthen the ethical business management with vendors, during interactions with vendors, such as requesting for quotations, tender meetings, going through ordering procedures, etc. we will express CTCI's and ECOVE's resoluteness in ethics by means of words, written and verbal. Prior to a tender meeting, we will execute Integrity Moment actions, explaining the contents of the Supplier Code of Conduct to vendors, informing the prohibition of private interests, and providing information to the whistleblowing mailbox. The implied covenant of good faith and fair dealing is also added to purchase orders to vendors and engineering commission contracts.



Rules that Suppliers Shall Comply With



In addition to the Company's Supplier Code of Conduct, when offering prices to the Company, vendors shall also comply with and pay attention to the following rules :

- ✓ Vendors shall not pay commission, intermediary fees, kickbacks, or other benefits (e.g., dividends, gratuities, bribes, kickbacks, or any other form of improper interests) to relevant personnel of the project (organizers of the buyer, project member, organizers from client, or client) to promote the signing of the purchase contract.
- ✓ If any of the aforementioned illegal interest has been validated to be true, the vendor shall be stopped from continued participation in the tender of the project. If purchase contract for the project has been signed, it will be terminated and claims for any of the buyer's losses will be sought.
- ✓ At the same time, vendors shall report on any ECOVE employee who breaches the ethical code of conduct. If allegations were found to be true, suitable rewards will be given from ECOVE.
- ✓ Vendor reporting method: provide substantial explanation and related proof, or submit to the designated reporting mailbox at (ctci@reportnow.com.tw).

Sustainable supply chain management mechanisms

Supplier Social Responsibility Commitment

With the aim of implementing CSR together with suppliers and encouraging suppliers to comply with relevant CSR and environmental issues, ECOVE has formulated the "Social Responsibility Undertaking" with reference to the International Labor Organization (ILO) convention and SA8000 Standard, covering ethical conduct, human rights protection, and environmental protection. This is a bilateral undertaking not to impede the freedom of association of employees, not to engage in child labor, not to infringe on the rights and interests of indigenous people, and not to do anything harmful to human rights. Along with it, all contracts include the clause "The contract may be terminated or rescinded at any time by the Company if Party B has violated its corporate social responsibility policy and has caused a significant negative impact on the environment and society" to reinforce the actual implementation of the undertaking of social responsibility.

Suppliers and contractors have invited to sign the Social Responsibility Undertaking since its completion in 2014. As of 2021, a total of 1,282 suppliers and contractors have signed the undertaking, while each year all newly onboarded suppliers are also invited to sign it. For existing suppliers who have not yet signed the undertaking, invites will continue to be extended to them to do so. At the same time, vendors would be requested to sign the undertaking at the point of signing new orders or new contracts to raise the signing rate. After several years of communication and promotion, we completed the existing vendor sign-ups in 2021 and reached the target of 100% sign-ups by 2022 ahead of schedule.

● Signing Social Responsibility Commitment



2021 Target	Progress of target completion	2022 Target
95% of existing suppliers have signed	Signup rate from existing suppliers reached 100% (target achieved)	100%
100% of new suppliers sign	New suppliers: 100% (target met)	100% of new suppliers sign

Supplier Audit and Coaching

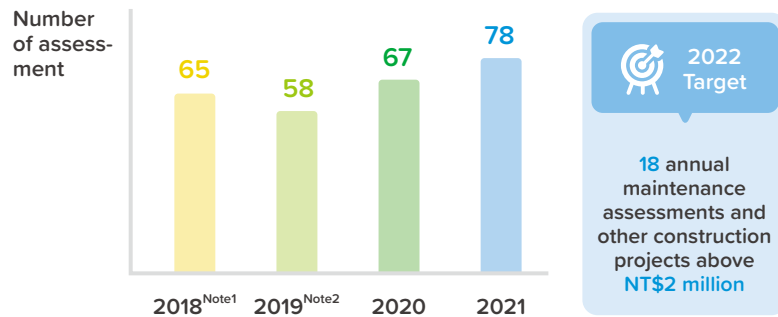
To understand the risks and competitiveness of the supply chain, ECOVE has set up audit and coaching mechanism for suppliers. The Purchasing Center, Quality Assurance, Safety and Health Office, and various project sites will undertake inter-departmental evaluation and audit for suppliers and contractors. On top of listing the quality of suppliers and contractors, costs, service standards, environmental protection, OSH, and technologies into the evaluation items to ensure their quality standards and safety and health, we also uphold the spirit of PDCA, requiring suppliers and contractors to rectify their deficiencies and we provide necessary guidance in a timely manner, so that ECOVE's supply chain can maintain the best competitive state and mitigate the risk of operational disruptions.



The Quality Assurance and Safety and Health Office will undertake on-site audits and guidance at each construction site from time to time. In terms of hazardous substance use, such as chemicals, gas, and fuel use, we require all suppliers to provide information on its components, safety information, and inspection report. Contractors will also be evaluated upon completion of each contract. On top of evaluating suppliers during the annual maintenance of each plant, since 2018 contracted projects with a contract value of more than NT\$2 million are also included in the evaluation and guidance. For non-compliance or deficiencies found in the evaluation or assessment results, ECOVE will facilitate vendors in the improvements. If there is no improvement, the vendor will be reported as unqualified. After being reviewed and confirmed by the responsible supervisor, the vendor will be listed in the "List of unqualified vendors" and be terminated. There are no unqualified vendors in the 2021 evaluation results.

In 2022, we plan to communicate and convey social responsibility-related messages and to reward and compliment outstanding vendors during plant visits and inspections. In addition, besides auditing vendors' onsite quality, safety, and legal compliance during the supplier assessment and inspection audit, we also take one step further to guide suppliers to fulfill CSR policy. Onsite supplier evaluation will be undertaken and result of which will be used as a reference in future purchasing tender.

● Supplier Assessment and Audit



Note 1 : Since 2018, a total of 18 assessments were conducted for nine plants (including Gangshan) during the biannual maintenance in the first and second half of the year. At the same time, the scope was expanded to include contracted construction projects of contract value above NT\$2 million.

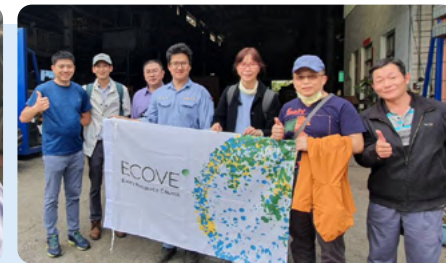
Note2 : With the completion of the incineration plant refinement project in 2019, the number of construction projects with a contract value of over NT\$2 million was reduced.

Contractor Visit and Communication

At ECOVE, the construction manager of each department conducts the assessment on each construction project. We also exert positive influence on vendors in the procurement practices. In 2021, we conducted plant visits and engagement activities with key equipment and equipment suppliers/subcontractors. Especially in times of a pandemic outbreak, the on-site visit to ascertain the source of supply and storage conditions of chemical suppliers became more critical to ensure that they are not affected by the global outbreak and transportation issues. Through different ways of engagement, we get to understand the actual situation of the internal operation of suppliers/contractors and ascertain their quality management. For example, we conducted on-site visits during key equipment inspections, before the shipment of devices/materials purchased, and during annual repair and also at quality control sites. During on-site visits, we made inquiries and gave advice and guidance for improvement.

On-site visits also help ECOVE evaluate the new vendors' project implementation and management capacities as well as their operating sites, manpower, materials, quality, and warehouse management, and the results of evaluation can be used as a basis for trial orders.

With a focus on implementing the control and management of sustainability risks for vendors, we also regularly hold subcontractor forums, inviting important engineering or technical service providers to participate, exchange, and share their requirements and experience in five key aspects of internal supply chain management, labor health and occupational safety, labor rights and human rights management, environment protection, and business governance. We leveraged on these forums to present the Excellent Quality and Safety Vendor Award to convey our encouragement and expectations to vendors. We hope that through such forums, the CSR benefits can become more widespread, and we can bring vendors along with us on the journey towards a better future of sustainable operation.



ECOVE team engaging in technical exchange with vendor



Evaluation of excellent manufacturers award





Green Procurement

By working to mitigate climate change, ECOVE actively supports the SDGs and prioritizes energy-saving equipment and products that pose less environmental impacts during procurement. We also encourage the use of green products. On the one hand, we help to promote the trend of green consumerism, and on the other hand, we can also promote energy consumption efficiency and reduce environmental pollution from energy use, achieving benefits of energy conservation, carbon reduction, and environmental protection. ECOVE tries our best to select products with Green Mark, water-conserving labels, green building materials labels, Type 2 environmental protection or carbon footprint labels to conserve energy, reduce carbon, and save our planet. In 2021, ECOVE continued to choose energy-saving green equipment for the incineration plant and project equipment improvement and renewal. In the newly acquired Xizhou incineration plant operation and renovation project, we carried out equipment improvement works such as inverter, transformer, electrical appliance and lighting renewal, etc.; ECOVE Waste Management Corp. renewed its tractor with the sixth phase of environmental

protection standard; G.D. Development Corporation cooperated with the government's green energy development policy and maintained its investment in setting up a solar power plant, choosing high-efficiency solar cell modules and converters, etc. The total amount of green procurement was over NT\$61.82 million.

ECOVE recognizes that green procurement and green consumption are core values that are indispensable to the promotion of sustainable development. In response to the green consumption policy, we have introduced the concept of green living circle into the Company, not only purchasing green procurement of "low-pollution, energy and resource-saving, recyclable" environmentally friendly products, but also responding to other green services such as green office and green transportation, with the goal of energy saving, carbon reduction and operating cost reduction in both production and living.

Green procurement amount



Since 2014, the cumulative green procurement amount has exceeded NT\$417 million

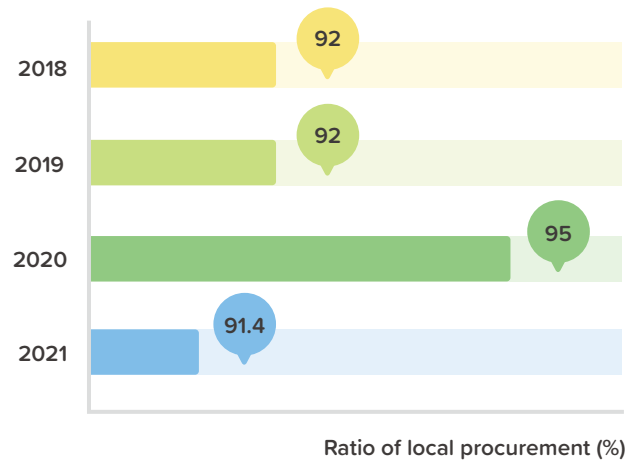
Year	2016	2017	2018	2019	2020	2021
Green procurement amount	26,048	30,789	43,284	124,476	121,152	61,825

Green procurement amount Unit : thousand NT\$

Local Procurement

ECOVE implements the local procurement policy in compliance with the parent company's sustainable supply chain development strategy. We believe that local procurement is conducive to local economic development and can minimize the negative impact on the environment by reducing carbon emissions from transportation. Except for special machinery components, ECOVE strives to source locally without affecting the stable operations, safety, and fairness of procurement. We screen local vendors with potential for the re-engineering of worn parts and equipment and provide them the opportunities to win trial orders and improve autonomy. The spare part engineering is mostly contracted to local vendors to reduce carbon emissions and waste and to create local employment and business opportunities.

Local procurement amount for the past four years



1. Local procurement is defined as purchases using the New Taiwan Dollar (NTD) with local vendors in Taiwan.
2. The proportion of local procurement will affect the change of procurement amount due to the major and minor annual maintenance (one minor overhaul in three years and one major overhaul in six years) of key equipment (foreign original parts and technicians).
3. In 2021, due to the contracting of a number of incineration plant improvement projects, the total procurement and contracting amount increased. Although the amount of local procurement increased, the proportion of local procurement decreased compared to 2020 because we were requested to supply overseas original equipment and facilities or introduce new technologies.

Most Reliable



ECOVE has been ranked in the top 5% for eight consecutive years in the FSC corporate governance evaluation

Results of the 8th Corporate Governance Evaluation co-organized by the TWSE and TPEX indicated that ECOVE has ranked among the highly sought-after top 5% among all 1,600 companies that were listed on the TWSE and the TPEX. A total of eight corporate governance reviews were completed so far. ECOVE has maintained as the top 5% for eight consecutive years. We are also the only OTC company that has been ranked in the top 10% of non-financial and non-electronic companies with a market value of more than NT\$10 billion for four consecutive years, making it a model of corporate governance among OTC companies.

In order to strengthen the corporate governance of TWSE/TPEX listed companies in Taiwan, the Taiwan Stock Exchange and the Taipei Exchange have organized the Corporate Governance Assessment, which consists of 79 indicators in four major areas: "safeguarding shareholders' rights and treating shareholders equally", "strengthening the structure and operation of the Board of Directors", "enhancing information transparency" and "implementing corporate social responsibility".

ECOVE is the first OTC company in Taiwan to be listed as a holding company. Inheriting the emphasis on corporate governance from its parent company, CTCI, ECOVE's corporate vision is to be "the most reliable leader in sustainable resource recycling". ECOVE will contribute to the economy, environment, and society, creating sustainable value for the Company and continuously serving as the "most reliable partner" with the philosophy of improving "Resource cycling' efficiency", "harnessing the prowess of intelligent systems and data management", "actively participating in national environmental policies and issues", and "community collaboration and contribution".



ECOVE was awarded the top 5% of the 8th Annual "Corporate Governance Review" by the Taiwan Stock Exchange, and the award was received by Jun Jer Liao, the Chairman of the Board.



Message
from Chairman

Overview

Corporate
Governance

Environmental
Sustainability

Social
Co-prosperity

Appendix



Environmental Sustainability

In response to climate change and global warming, we are committed to actively enhancing environmental protection performances during operating activities to make a sustainable environment.

48	49	55	62	67	71
ECOVE, an Energy from Waste (EfW) Service Provider	Waste Management and Application	Circular Economy	Adapting to Environmental Changes	Mitigating Environmental Impact	Most Reliable

Performance Highlights

Excellence Award

Environmental Protection Administration's 3rd National Enterprise Environmental Protection Award - Excellence Award

Silver Award

Silver Award at 2021 Kaohsiung City Photoelectric Smart Building Certification

2-Star Rating

Environmental Protection Administration's "Resource Recycling Excellent Enterprise" with 2-star rating

No.1

First ranking goes to ECOVE Solvent Recycling Corporation, with international certificates of recycling economy and carbon neutrality

Excellent

Excellent Award of "Implementation of Water Conservation Counseling Improvement" by Water Resource Agency



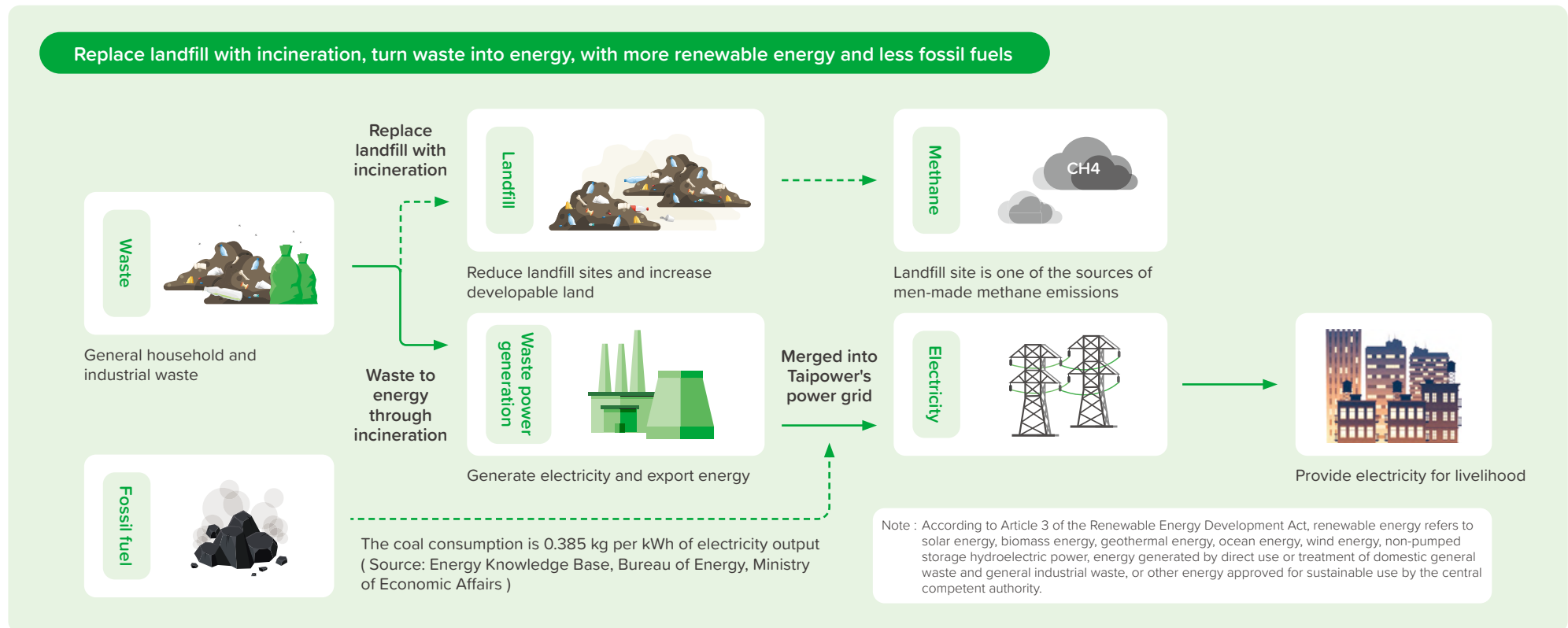
ECOVE, an Energy from Waste (EfW) Service Provider

The World Bank' statistics show that the total weight of waste produced every day in the world is equivalent to the total weight of the Great Pyramid of Giza in Egypt. Similarly, the amount of waste produced in Taiwan is increasing despite negative population growth. According to statistics of the Environmental Protection Administration, the general waste generation in Taiwan hit a new high in 2020, with the volume of waste produced by a person averaging 417 kilograms per year.

As one of the leading EfW service providers in Taiwan, ECOVE has long been committed to integrating and applying the state-of-the-art waste treatment and energy production technologies to fully recycle unavoidable and non-renewable waste. ECOVE turns 2.54 million tons of waste into electricity (energy from waste, EfW) every year, which is equivalent to

replacing 550,000 tons of fossil fuels . EfW can reduce not only unabated waste but also cities' dependence on fossil fuels.

Although carbon dioxide is produced when waste is burned, its emission is significantly less than that produced from burning fossil fuels. Today, recycling non-renewable waste in the most efficient way is better than sending it to landfills as landfill produces far greater greenhouse gas (GHG) emissions than incineration. Currently, ECOVE is planning to install new equipment to capture CO2 generated during the incineration and store it for other uses.



Waste Management and Application

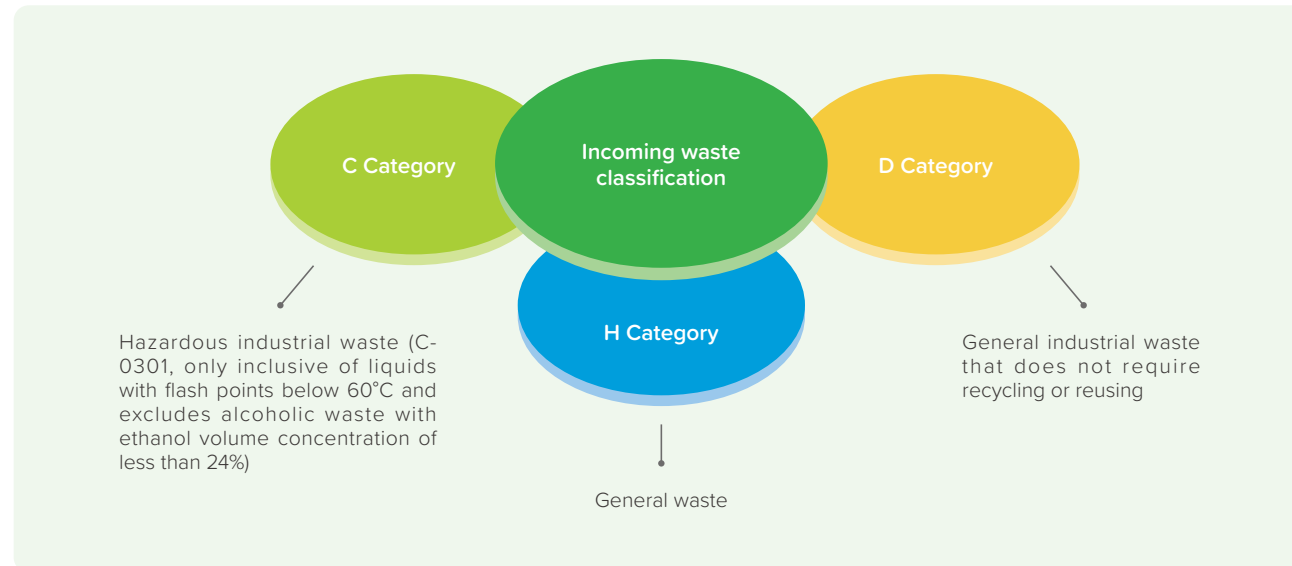
GRI 305-1, 2, 7, 306-2, 201-2, 301-1

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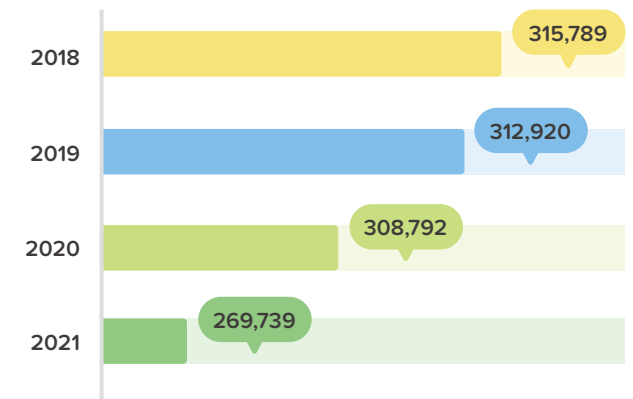
Waste Entry Management

The scope of business that ECOVE Waste Management Corp. engages in covers waste collection, disposal, and treatment, removal and transportation of incineration residues, and other related services. In 2021, ECOVE Waste Management Corp. managed a total of 269,739 metric tons of waste, accounting for 25% of the total volume of waste received and treated by private institutions, which was outsourced to by large-scale domestic municipal waste recycling (incineration) plants. With the aim of managing the quality of waste effectively, ECOVE Waste Management Corp. uses intelligent management systems in the screening of the qualifications of contractors entering the plants, the approval of waste types, and the implementation of the development, storage, and tabulation of incoming data, so as to gain complete and real-time control. The Company also analyzes the incoming statistical data to control the quality of waste effectively thus facilitating the smooth operations of the incineration plant. The systems enabled a fast and accurate upload of both waste clearance and management data to EPA's Control Center under normal operations, thus facilitating the completion of statutory declarations and alleviating workload at the same time. In addition, the environmental protection regulations/entry management information can be updated and announced in real-time for the contractors who enter the plants. Management systems are also deployed at each incineration plant to establish a blacklist of waste or contractors, thus, creating a boycott effect and controlling each incineration plant effectively. The characteristics of waste in each region can also be analyzed to facilitate the effective management of resources. In an effort to better understand and affirm the source and nature of waste, ECOVE Waste Management Corp. carries out on-site consultation visits to the source to inspect its operational process, waste output quality/storage, etc. While driving the promotion of waste recycling, we also advocate, among other issues, the relevant environmental protection laws and regulations for commissioning and key points of incineration plant entry and exit management, so as to ensure that source of production can provide waste that meets the operational requirements of the incineration plant, stabilize treatment efficiency, and mitigate treatment risks.

A medium- and long-term waste reduction target in incineration waste management is to reduce sludge produced by agriculture, forestry, fishery, animal husbandry, and manufacturing industries through resource cycling and reuse; the goal is to reduce the incoming volume by 50%. From the commencement in 2018 until 2021, we have received and treated 6,213 tons, 5,475 tons, 4,115 tons, and 3,746 tons, respectively, achieving a reduction of about 40%. However, during the process of coordinating with production sources towards resource cycling to reduce collection, in light of the progressive roll-out of relevant supporting measures for reduction of sludge produced, we anticipate we will achieve the target of 50% reduction in the collection in 2023. The excess capacity can be used for the receiving and treatment of other waste, essentially making good use of the incineration capacity and power generation through the heat of the incineration. Hence giving the promotion of resource cycling and reuse a push while managing the types of incoming waste.



Total volume of waste managed by ECOVE Waste Management Corp. (metric tons)



Total volume of waste managed



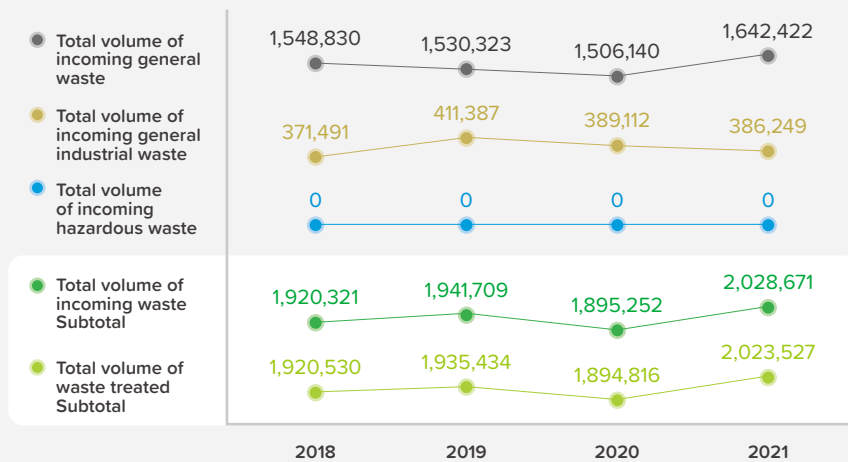
Waste Treatment Capacity

The incineration plants under the operation and management of ECOVE Environment Service Corp. endeavor to incinerate and treat waste appropriately and to optimize the use of the heat energy generated. The heat generated is converted into electricity for power companies to deliver to end users, which reduces not only the use of fossil fuels by power companies but also the environmental pollution caused by landfill waste. The optimized operational techniques of ECOVE Environment Service Corp. not only harness the full benefits of waste, but also maximize the efficiency of energy and resources required in the waste treatment process. With an aim of zero waste and zero emissions, ECOVE Environment Service Corp. enhances the residual value of waste, flue gas, wastewater, and secondary pollutants as much as possible while minimizing the consumption of resources, so as to achieve the goal of full utilization of waste.

ECOVE Environment Service Corp. currently operates and manages eight large-scale waste incineration plants and two small-scale industrial waste incineration plants in Taiwan. As the two small-scale incineration plants have a lower capacity for waste management, only

data for the eight large-scale incineration plants, namely Keelung Plant, Southern Taoyuan Plant, Miaoli Plant, Houli Plant, Wurih Plant, Chengxi Plant, and Gangshan Plant, are being presented. In 2021, the total amount of incoming waste (including general waste and general industrial waste) was 2,028,671 metric tons. Based on the 6,345,808 metric tons of waste that entered the 24 waste incineration plants in Taiwan in 2021, ECOVE Environment Service Corp. accounted for 32.0% of the total volume in Taiwan. Of which, 1,642,422 metric tons of general waste accounted for 81.0% of the total incoming volume at ECOVE Environment Service Corp. while the 386,249 metric tons of general industrial waste accounted for 19.0% of the total incoming volume at ECOVE Environment Service Corp. Based on the latest statistics of the Environmental Protection Administration, Executive Yuan, Taiwan produces about 1.138 kg of waste per person per day in the past three years, which is equivalent to ECOVE Environment Service Corp. serving 4.88 million people for the waste they generated. As hazardous waste is required by law to be handled by dedicated treatment agencies, the incinerators operated by the Company do not receive and treat hazardous waste.

Volume of incoming waste and waste treated by incineration plants operated and managed by ECOVE Environment Service Corp

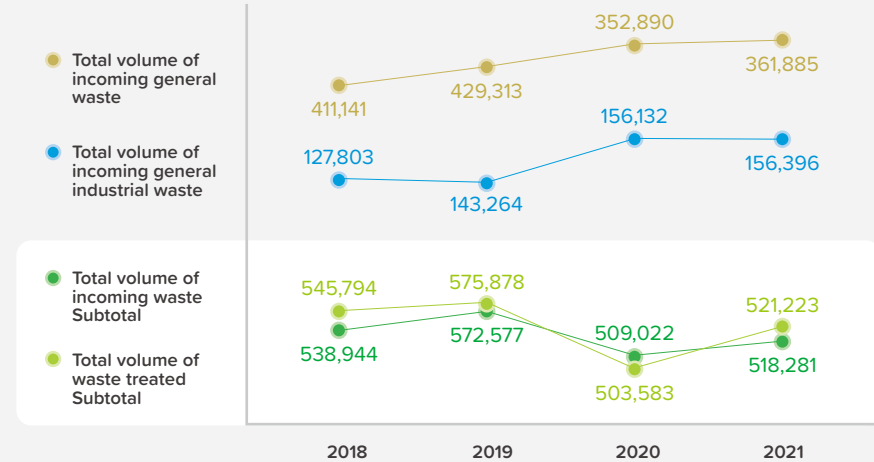


Unit / metric tons

Note 1: The difference in the volume of incoming waste and the volume of waste treated is mainly attributable to water vaporization or adjustment of storage volume of the bunker.

Note 2: In June 2021, ECOVE Environment Service Corp. took over the operation of Xizhou Plant in Changhua County.

Volume of incoming waste and waste treated by incineration plant operated and managed by SINOGAL



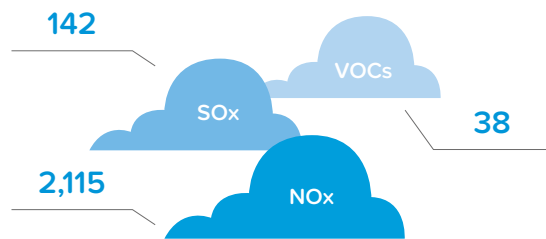
Unit / metric tons

Note: The difference in volume for incoming waste and waste treated is mainly attributable to water vaporization or adjustment of storage volume of the bunker.

Incineration Plant Pollutant Management

In an effort to prevent the emission of air pollutants from becoming the environmental impact of incineration waste, the incineration plants we operate have been installed with continuous emission monitoring systems in the flues in accordance with the law to continuously monitor seven items, namely, flue gas flow rate, oxygen content, sulfur oxides, nitrogen oxides, hydrogen chloride, carbon monoxide, and opacity, for 24 hours. The information of the continuous flue gas emissions monitoring system is uploaded to EPA (https://swims.epa.gov.tw/swims/swims_net/Statistics/Statistics_Month.aspx), where information from the eight large-scale incineration plants are currently available for public reference. In addition, regular on-site tests are conducted on a monthly or quarterly basis to test for sulfur oxides, nitrogen oxides, hydrogen chloride, carbon monoxide, particulate pollutants, heavy metals, and dioxin. The EPA imposes air pollution levies specifically for sulfur oxides (SOx), nitrogen oxides (NOx), volatile organic compounds (VOCs), particulate pollutants, heavy metals, and dioxin in stationary pollution sources. Since the emissions of particulate pollutants, heavy metals, and dioxin are relatively low, only statistics for SOx, NOx, VOCs are included in this report.

● Volume of pollutant emissions in 2021 Unit / metric tons



Note1 : Since ECOVE Environment Service Corp. took over the operation of Xizhou Plant in June 2021, the emissions in June were calculated based on the proportion of operating hours or volume treated. The scope of data is from the date when Xizhou Plant was taken over to the end of the year.

Note2 : The emissions of NOx and SOx of each plant were calculated based on the data of the continuous monitoring system for air pollutant emissions from stationary sources except for Wurih Plant, which used an alternative to calculate the emissions of NOx and SOx due to the renewal of the continuous monitoring system.

Note3 : The emissions of VOCs were calculated based on the amount of air pollution fees declared by each plant.

Besides maximizing the utilization of waste through well-developed operating techniques, ECOVE Environment Service Corp. also strives to optimize the control of the concentration of various pollutants emissions during the incineration process of the incineration plant. The amount of urea used per unit of waste in 2021 was higher than that of the past four years. The main reason for the increase was that in response to the EPA's 2024 air pollutant reduction target, the Company either increased the amount of urea used per unit of waste (used in selective non-catalytic reduction, or SNCR in short) or adjusted the position of the spray guns of SNCR systems to achieve the reduction targets for NOx emission. Chengxi Plant was originally not equipped with a NOx removal system. In response to the stricter regulatory standards, the SNCR system was added to Chengxi Plant to reduce NOx emissions using the urea-water solution. The Company will continue to optimize the air pollution prevention and control system (e.g., renewing SNCR to improve the position of urea injection and the atomization process) to achieve the reduction of both air pollutants and the use of urea. Due to changes in the nature of waste and the increase in heating value, the amount of slaked lime used per unit of waste increased slightly. Continuous efforts are underway to boost the efficiency of chemicals used while reducing the amount of chemicals used per unit of waste through the use of high-efficiency deacidification agents or the adjustment of process parameters. There was an increase in the total amount of urea and slaked lime used as ECOVE Environment Service Corp. took over the operation of Xizhou Plant in June 2021.

● Amount of chemicals and slaked lime used at the incineration plants

Item	Unit	2018	2019	2020	2021
Urea	Total amount (metric tons)	2,561	2,897	3,319	3,568
	Average amount used per one ton of waste treated (kg)	1.33	1.50	1.75	1.76
Slaked lime	Total amount (metric tons)	25,912	25,222	26,075	28,266
	Average amount used per one ton of waste treated (kg)	13.5	13.0	13.8	14.0

As of the end of 2021, the amount of bottom ash generated was 269,371 metric tons, with an average of 133.1 kg of bottom ash generated per ton of waste treated while the amount of fly ash (inclusive of reaction products) generated was 62,897 metric tons, with an average of 31.1 kg of fly ash generated for each ton of waste treated. The bottom ash is subjected to sampling and testing in accordance with regulations to ensure compliance with the bottom ash recycling management measures and transported to bottom ash reuse plants for recycling. After the fly ash is packaged after stabilization treatment, or stabilized after washing, it is sampled and tested before being sent to the qualified landfills for sanitary burial so that there will not be situations of methane escaping to the atmosphere during the burial process.

None of the existing large-scale incineration plants in Taiwan treats hazardous industrial waste. According to the current hazardous waste identification standards, both bottom ash and fly ash fall into general industrial waste. Each plant shall conduct tests to ascertain that regulatory and contractual standards are met before the final landfill disposal can be carried out. Bunds at legitimate landfills must also be lined with impermeable membranes, ensuring that natural water bodies and individual wastewater collecting and processing systems are isolated. Since there is no leachate from the landfill refuse, there is no need for improvement works.

● Bottom ash and fly ash generation volume from incinerators

Item	Unit	2018	2019	2020	2021
Bottom ash	Total amount generated (metric tons)	265,778	276,683	262,244	269,371
	Average amount produced per one ton of waste treated (kg)	138.3	143.0	138.4	133.1
Fly ash	Total amount generated (metric tons)	62,391	65,183	69,364	62,897
	Average amount generated per one ton of waste treated (kg)	32.45	33.7	36.6	31.1



Cogeneration and Sales of Electricity

Waste incineration plants operated and managed by ECOVE Environment Service Corp. (including Macao) use the heat generated by waste incineration to generate electricity and reduce carbon emissions by replacing the use of fossil fuels. In 2021, these waste incineration plants incinerated a total of 2,544,750 metric tons of waste, of which, waste that can be used for power generation accounted for 99.9% of the total incoming waste (the difference may be due to vaporization of water on the surface of the waste in the bunker or capacity of the bunker). The total power generated was 1,449,276 MWh, of which a total of about 1,191,817 MWh was sold back to power companies, i.e., 82.2% of total power generated can be transmitted onto the power grid for users while the rest of the power was used within the plants for the operation of the incinerators. Based on statistics of Taiwan Power Company (<http://www.taipower.com.tw>) and Companhia de Electricidade de Macao (<https://www.cem-macao.com/zh/>), this is enough to supply the annual electricity consumption of 272,000 households in Taiwan in 2021 (the average monthly electricity consumption of each household is 313 kWh) and the annual electricity consumption of 32,900 households in Macao (the average monthly electricity consumption of each household is 430 kWh). Taiwan Power Company and Companhia de Electricidade de Macao reduced about 793,000 metric tons of CO₂e in 2021 (based on the power discharge coefficient published by the Bureau of Energy, MOEA).

The facilities overhaul and upgrading works for the Chengxi plant were completed in 2020. Works were divided into the update of five key systems namely waste entry systems, flue gas management systems, system control communication system, power transmission and distribution system, and condensation system. The annual power generation in 2021 increased by about 18.99 million kWh from 2019. After the adjustment and management of various parameters to increase the power generation, the power generation per unit of waste (ton) increased by 0.12 kilowatts, or 28.2%.

Keelung

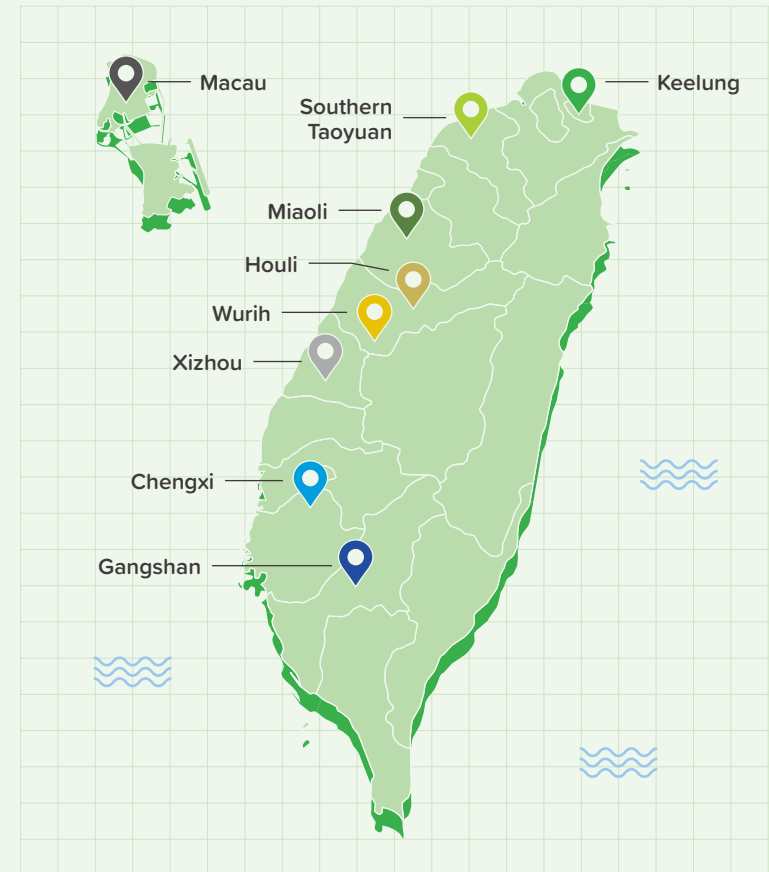
Total power generation : **118,347** / MWh
 Amount of power sold : **98,672** / MWh
 Power generation per ton of waste in 2021 : **0.63** / MWh
 Power generation per ton of waste in 2020 : **0.64** / MWh
 Power generation difference per ton of waste : **-0.01** / MWh
 Total greenhouse gas (GHG) emissions reduced : **59,410** / metric tons (Metric ton CO₂e)

Southern Taoyuan

Total power generation : **252,595** / MWh
 Amount of power sold : **218,187** / MWh
 Power generation per ton of waste in 2021 : **0.61** / MWh
 Power generation per ton of waste in 2020 : **0.61** / MWh
 Power generation difference per ton of waste : **0** / MWh
 Total greenhouse gas (GHG) emissions reduced : **126,803** / metric tons (Metric ton CO₂e)

Miaoli

Total power generation : **92,383** / MWh
 Amount of power sold : **75,544** / MWh
 Power generation per ton of waste in 2021 : **0.59** / MWh
 Power generation per ton of waste in 2020 : **0.58** / MWh
 Power generation difference per ton of waste : **0.01** / MWh
 Total greenhouse gas (GHG) emissions reduced : **46,376** / metric tons (Metric ton CO₂e)



Total
 Total power generation : **1,449,276** / MWh
 Amount of power sold : **1,191,817** / MWh
 Total greenhouse gas (GHG) emissions reduced : **793,852** / metric tons (Metric ton CO₂e)

Note1 : Total power generation in Macao x 0.82 kg/kWh = Reduction in kg CO₂e. (Power discharge coefficient: 0.82 kg/kWh, as published by Companhia de Electricidade de Macao in 2020).

Houli

Total power generation : **171,666** /MWh
 Amount of power sold : **143,107** /MWh
 Power generation per ton of waste in 2021 : **0.63** /MWh
 Power generation per ton of waste in 2020 : **0.62** /MWh
 Power generation difference per ton of waste : **0.01** /MWh
 Total greenhouse gas (GHG) emissions reduced : **86,176** /metric tons (Metric ton CO₂e)

Chengxi

Total power generation : **103,636** /MWh
 Amount of power sold : **79,024** /MWh
 Power generation per ton of waste in 2021 : **0.54** /MWh
 Power generation per ton of waste in 2020 : **0.45** /MWh
 Power generation difference per ton of waste : **0.09** /MWh
 Total greenhouse gas (GHG) emissions reduced : **52,025** /metric tons (Metric ton CO₂e)

Wurh

Total power generation : **183,606** /MWh
 Amount of power sold : **150,131** /MWh
 Power generation per ton of waste in 2021 : **0.65** /MWh
 Power generation per ton of waste in 2020 : **0.62** /MWh
 Power generation difference per ton of waste : **0.03** /MWh
 Total greenhouse gas (GHG) emissions reduced : **92,170** /metric tons (Metric ton CO₂e)

Gangshan

Total power generation : **225,921** /MWh
 Amount of power sold : **182,485** /MWh
 Power generation per ton of waste in 2021 : **0.66** /MWh
 Power generation per ton of waste in 2020 : **0.65** /MWh
 Power generation difference per ton of waste : **0.01** /MWh
 Total greenhouse gas (GHG) emissions reduced : **113,412** /metric tons (Metric ton CO₂e)

Xizhou Note 3

Total power generation : **92,585** /MWh
 Amount of power sold : **75,069** /MWh
 Power generation per ton of waste in 2021 : **0.53** /MWh
 Total greenhouse gas (GHG) emissions reduced : **46,478** /metric tons (Metric ton CO₂e)

Macau

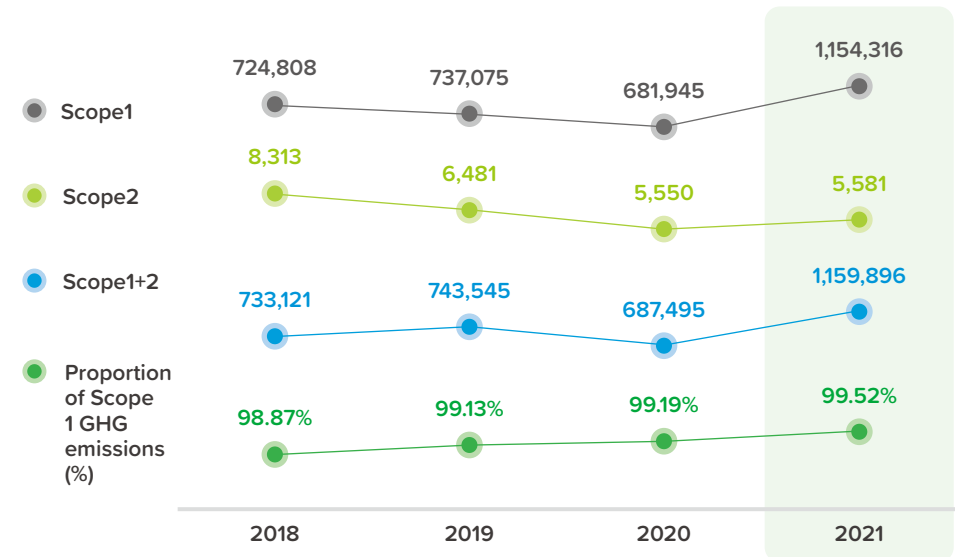
Total power generation : **208,539** /MWh
 Amount of power sold : **169,598** /MWh
 Power generation per ton of waste in 2021 : **0.40** /MWh
 Power generation per ton of waste in 2020 : **0.38** /MWh
 Power generation difference per ton of waste : **0.02** /MWh
 Total greenhouse gas (GHG) emissions reduced : **171,002** /metric tons (Metric ton CO₂e)

Note2 : Total power generation in Taiwan x 0.502 kg/kWh = Reduction in kg CO₂e. (Power discharge coefficient: 0.502 kg/kWh, as published by the Bureau of Energy, MOEA in 2020).

Note3 : The data were calculated from June 2, 2021, when Xizhou Plant was taken over.

ECOVE Environment Service Corp. regularly conducts autonomous GHG inventories of waste incineration and thermal energy conversion processes. In 2021, the fixed, process-derived, mobile, escaped, and indirect from energy emissions (Scope 1), etc. of the incineration plant operated and managed by ECOVE Environment Service Corp. emitted a total of 1,154,316 metric tons of CO₂e, which is about 472,371 metric tons more than that of 2020. The Scope 1 of incineration plants is mainly produced from the discharge of incineration waste and chemicals used to reduce pollutant emissions. This includes the receiving and treatment of waste, diesel, urea, etc. At present, the volume of domestic waste generated is larger than the treatment capacity. In response to the increase in waste, the treatment capacity expanded in recent years mainly through the use of different operating management systems and intelligent management systems that reduced unplanned incinerator shutdowns, coupled with a reduction in air pollution. In addition to a slight increase in chemical usage, the volume of waste treated increased significantly upon the take-over of Xizhou Plant and the completion of the revamping works at Chengxi Plant, which led to a rise in CO₂ emissions.

● GHG emissions of incineration plants in past four years (metric ton CO₂e)



Note 1 : The scope of GHG emissions covers eight large-scale incineration plants and two small-scale industrial waste incineration plants (excluding Macau Refuse Incineration Plant). The data were calculated from June 2, 2021, when Xizhou Plant was taken over.

Note 2 : Scope 1 includes fixed combustion emissions, mobile combustion emissions, process-derived emissions, and escaped emissions.

Note 3 : Scope 2 refers to power discharge, where the coefficients are 0.554 (2017), 0.533 (2018), 0.509 (2019), 0.502 (2020) kg CO₂e/kWh as published by the Bureau of Energy, MOEA, and the GWP value is IPCC AR4.

Note 4 : The proportion of Scope 1 is calculated by taking the sum of total emissions of Scope 1 and Scope 2 as the denominator and Scope 1 as the numerator.



Autonomous Organizational Inventories

ECOVE Environment Service Corp. conducts organizational autonomous GHG inventories for the waste incineration plants it operates and manages. Taking 2014 as the base year, the volumes of waste treated in all incineration plants in 2021 were lower than that the base year, and the GHG emissions were also reduced (except for Wurih Plant, where GHG emissions rose due to an increase in industrial waste treated). For primary sources of emissions, taking 2014 as the benchmark, an annual target of reducing total carbon emission by 1% was set. The total GHG emissions were reduced by 22.3% in 2021, meeting the reduction target.

ECOVE Solvent Recycling Corp. also conducts self-inspection of GHG inventory. The total emissions in 2021 were 1,183 metric tons of CO₂e, mainly from natural gas combustion. Of these, the Scope 1 emissions were 711 metric tons of CO₂e, comprising of stationary combustion emissions, mobile combustion emissions, process-derived emissions, and escaped emissions while Scope 2 emission was 472 metric tons of CO₂e, where the power discharge coefficient is 0.502 kg CO₂e/kWh as per published by Bureau of Energy, MOEA.

● Results of reduction in GHG emission for incineration plants operated and managed by ECOVE Environment Service Corp

Plant	2014 (base year)					2021					Reduction results
	Scope 1	Proportion of Scope 1 (%)	Scope 2	Total GHG emissions	Biomass emissions	Scope 1	Proportion of Scope 1 (%)	Scope 2	Total GHG emissions	Biomass emissions	
Keelung plant	90,278	99.83	152	90,430	97,726	77,118	99.74	202	77,320	96,628	13,110
Southern Taoyuan Plant	284,248	99.92	230	284,478	209,035	235,507	99.91	218	235,725	209,823	48,753
Taoyuan Airport Plant	4,381	73.30	1,596	5,977	4,364	1,382	45.43	1,660	3,042	4,090	2,935
Miaoli plant	86,377	99.94	55	86,432	75,120	72,422	99.93	47	72,469	85,101	13,963
Houli plant	230,930	99.91	200	231,130	130,711	140,154	99.88	167	140,321	149,740	90,809
Wurih Plant	116,263	99.79	242	116,505	126,182	134,352	99.75	337	134,689	167,927	-18,184
Tainan plant	120,557	99.80	243	120,800	118,182	60,507	99.70	179	60,686	107,192	60,114
Tainan Science Park Plant	16,138	85.55	2,726	18,864	6,810	14,404	84.43	2,656	17,060	1,591	1,804
Total	949,172	99.43	5,445	954,617	768,131	735,846	99.26	5,466	741,312	822,092	213,304

Note 1 : The biomass emission equivalent is calculated based on the analysis of waste sampling.

Note 2 : Reduction results = Total GHG emissions in 2014 - Total GHG emissions in 2021.

Note 3 : The 2021 discharge coefficient data is derived from the 2020 power discharge coefficient of 0.502 kg CO₂e/kWh published by the Bureau of Energy, MOEA, and the GWP value is IPCC AR4.

Note 4 : Since Gangshan Plant and Xizhou Plant were not yet operated and managed by ECOVE ESC in 2014, they were not included in the calculation of GHG reduction results.

Note 5 : The proportions of Scope 1 and Scope 2 are calculated by taking the sum of the total emissions of Scope 1 and Scope 2 as the denominator and Scope 1 and Scope 2 as the numerators.



Circular Economy

SASBIF-WM-420a.2, IF-WM-420a.3

First In the Industry to Pass the BS 8001 Audit

After obtaining the world's first-ever "BS 8001 Circular Economy Standard" certificate, ECOVE was once again audited by the renowned third-party certification body, British Standards Institution (BSI), with "Resource Recycling Service Integration Innovation and Efficiency Improvement" being the target for the audit. Audit results showed ECOVE has reached the highest overall maturity level and optimal level of innovation, hence accomplishing the feat of having all business areas passing the Circular Economy Standards certification. This is reflective of how ECOVE enhanced economic, environmental, and social benefits through efficient resource management, improving the recycling utilization rate of every resource and the Resource Cycling Efficiency TM while enabling company-wide operations and services to be implemented in compliance with the principles and model of the circular economy.

ECOVE has been involved in waste management and incineration for more than two decades. Among the 24 municipal waste incineration plants in Taiwan, ECOVE has operated, maintained, overhauled, carried out system equipment upgrades, and other related technical or management services on more than two-thirds of these incineration plants. With a wealth of knowledge of the waste treatment life cycle, ECOVE has made breakthroughs along the way, becoming the first company in the world to obtain the BS 8001 certificate in October 2017 with respect to "energy from waste (EfW) and efficiency improvement," just five months after the world's pioneering circular economy standard BS 8001 was unveiled in May.

The scarcity of water resources has given rise to a crisis, which has led ECOVE to dedicate attention to water-related projects. ECOVE combined its successful experiences and professional capabilities in areas such as incineration plant operation and maintenance, intelligent data management, equipment upgrades, etc., and applied them to projects in the water industry. In 2019, ECOVE became the first company in Taiwan that is certified to BS 8001 standard on "reclamation of water resources."

ECOVE adheres to the core philosophy of "Every Resource Counts," and applies its accumulated experience and technology of waste management and incineration, as well as intelligent systems and data management, to other business areas in a practical and effective manner. Following the obtainment of certification for "energy from waste (EfW) and efficiency improvement" and "reclamation of water resources," ECOVE was audited under BS 8001 in 2020 for "resource cycling service integration, innovation, and efficiency improvement" by targeting three key business areas of waste management and incineration, renewable energy, and recycling and reuse. The audit results showed that ECOVE had reached the highest overall maturity level and optimal level of innovation. In effect, all of ECOVE's business areas are now certified to BS 8001, and ECOVE is one step closer to becoming a net-zero carbon enterprise.



In 2017, with the target of "energy from waste (EfW) and efficiency improvement", ECOVE obtained the world's first BS 8001 Circular Economy certificate. ECOVE Chairman Jun Jer Liao (right) accepted the award certificate from British Standards Institute (BSI) General Manager Shu Sheng Pu.



In 2019, with the target of "reclamation of water resources," ECOVE obtained the first BSI Circular Economy certification in Taiwan.



In 2020, ECOVE obtained the BS 8001 Circular Economy certificate for "resource cycling service integration, innovation, and efficiency improvement," accomplishing the feat of certification of Circular Economy Standards in all business areas and fulfilling the goal of becoming a net-zero carbon enterprise.



Driver of Circular Economy

GRI 303-3~5

In line with the government's sustainable development policy, ECOVE assists in the commercialization and popularization of recycling and reuse technologies that are still under development, improving equipment operation efficiency and reducing costs. In order to master the initiative of new business development, the market development department in ECOVE set up a "technology assessment team" to evaluate various recycling technologies. Therefore, we set the collection of PET bottles, reclamation of water, waste solvent recovery, solar energy, and organic waste recycling as key development areas.

Waste Solvents

ECOVE strives to promote the resource recycling and reuse. To that end, in early 2018, ECOVE expanded its presence through a merger and acquisition and established ECOVE Solvent Recycling Corp., extending the use of recycling technologies to the semiconductor industry. Waste Isopropyl Alcohol (IPA) produced in the industry is concentrated and purified and subsequently converted into industrial-grade products which are returned to the market via supply chain sales, effectively reducing the exploitation of natural resources. In 2021, ECOVE Solvent Recycling Corp. treated approximately 11,096 tons of waste IPA, an increase of 3,096 tons compared with the previous year. If they were incinerated, it would have generated approximately 8,179 tons of CO2 emissions.

With the integrated technology application of waste solvents, ECOVE Solvent Recycling Corp. continued to improve the utilization of heat in distillation by using low-carbon boiler heat sources (replacing heavy oil with natural gas) and distillation tower heat and to reduce the consumption of fuel by recovering waste heat from boilers. Based on the results of the GHG inventory from June 1, 2020 to May 31, 2021, ECOVE Solvent Recycling Corp. produced 1,035 tons of CO2. Through carbon offsets, ECOVE Solvent Recycling Corp. declared carbon neutrality on July 5, 2021, that is, no net increase of greenhouse gases in the atmosphere, becoming the first chemical raw material manufacturer in Taiwan to get certified to both the circular economy and carbon neutrality.



Carbon neutrality declaration verification opinion statement.

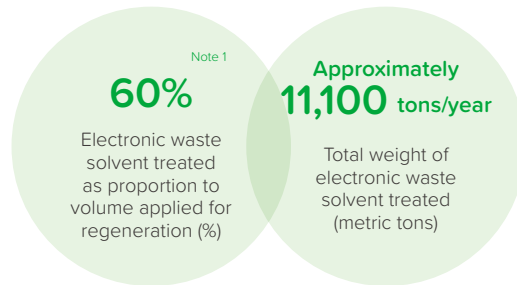


GHG emissions verification opinion statement.



Carbon offset declaration.

● Status of resource recycling in 2021



Note 1: The volume of electronic waste solvents reclaimed was approximately 11,096 tons, and the permitted volume was 18,600 (i.e., 11,096/18,600 = 60%).



Physical view of ECOVE Solvent Recycling Corp.



Replacement of heavy oil with natural gas.

PET bottles

BoReTech Co, Limited, an ECOVE reinvestment, has a series of capabilities for the manufacturing of recycling and cleaning systems, and cleaning solution planning specifically for PET bottles to build highly efficient recycling and cleaning equipment. BoReTech Co, Limited aims to provide customers with holistic solutions to PET bottle recycling . Through human-centered user interface and professional plant coordination planning, products with stable functionalities and decent quality were developed, significantly reducing the production cost of PET bottle recycling and cleaning facilities and reducing production loss, while increasing the quality of terminal products. To expand the scope of plastic recycling, an energy-efficient short-process recycling and cleaning system for PET bottles was launched in 2021 as a cost-effective option, as well as a cleaning system for miscellaneous plastics, making more contributions to plastic recycling worldwide.

Geographical scope

37 countries

More than 190 cleaning lines operating in 37 countries and regions around the world

Scale of recycling (as of end of 2021)

about 4 million tons

A total PET recycling capacity of about 4 million tons from BoReTech Co., Limited's facilities

Quality of products (as of the of 2021)

- B2B grade :** an annual processing capacity of about 940,000 tons; the bottle pieces produced can be used as raw materials for the manufacture of PET bottles.
- Chemical fiber grade :** an annual processing capacity of about 2.73 million tons; the chemical fiber produced can be used as the raw material for functional clothing.
- Sheet grade :** an annual processing capacity of about 340,000 tons.

Water Resources

ECOVE's efforts in the field of water resources cover three aspects: wastewater treatment, river and stream rehabilitation, and water resource reclamation. Primary treatment, secondary treatment, and advanced treatment, as well as ecological engineering, are respectively adopted to remove pollutants from water and to further recycle and reuse water resources.



PET bottle cleaning line.






PET bottle cleaning line.





● Developmental works in water resources and expected technical performance

Type of work	Item	Technicalities	Current performance	Expected performance
 <p>Wastewater treatment</p>	Linkou Water Resource Center	<ol style="list-style-type: none"> 1. Treatment of domestic wastewater produced by the public and in the park. 2. Preliminary treatment and primary treatment to remove waste and suspended solids in the water. 	<ol style="list-style-type: none"> 1. 23,000 metric tons of wastewater treated by ECOVE per day 2. The Water Resources Department, New Taipei City Government has invited bids for the second-phase expansion construction in March 2022. The construction is expected to be completed by the end of December 2023. 	36,500 metric tons of wastewater treated per day ^{Note1}
	Zhongli Sewerage System BOT Project	<ol style="list-style-type: none"> 3. Subsequently, water-soluble pollutants are removed using cultured micro-organism through the bio-reactor method during secondary treatment. 4. Produce reclaimed water through simple tertiary treatment for internal/external use. 	The project is currently under construction by CTCI and expected to be completed by the end of December 2022. Upon the completion of construction, it will be operated and maintained by ECOVE.	156,800 metric tons of sewage treated per day
	Water Treatment Plant of Pingtung Agricultural Biotechnology Park		4,000 metric tons of wastewater treated by ECOVE per day.	8,000 metric tons of wastewater treated per day ^{Note2}
 <p>River and stream rehabilitation</p>	New Taipei City Gravel Contact Oxidation Treatment and Water Resource Center	<ol style="list-style-type: none"> 1. An on-site treatment facility is used to rehabilitate and restore the water quality of the Tamsui river system. 2. The wastewater is made to flow through a zone of underground gravel and supplied with oxygen by aeration so that micro-organism settles on the gravel to form a biofilm to absorb pollutants in the wastewater. 3. Set up ecological parks and observation corridors on the ground level to create a space for ecological conservation, leisure, and education functions. 	106,700 metric tons of wastewater purified by ECOVE per day.	-
	Zhonggang Water Resource Center	<ol style="list-style-type: none"> 1. Target of treatment is the industrial wastewater discharged into the Zhonggang Main Drainage. 2. Physical methods such as dissolved air flotation, filtration, and activated carbon adsorption are used to remove pollutants from water. 	30,000 metric tons of wastewater purified by ECOVE per day.	-
 <p>Reclamation</p>	TSMC Reclaimed Water Plant at Southern Taiwan Science Park	<ol style="list-style-type: none"> 1. Purify treated water at Southern Taiwan Science Park up to TSMC's standards. In addition to removing pollutants in water with advanced membrane filtration, 2. the plant adopts BioNET, AFB, FBC, and other technologies developed by the Industrial Technology Research Institute to remove specific pollutants such as boron and nitrogen. 	Currently under construction, expected to be completed in 2022	<ol style="list-style-type: none"> 1. 20,000 metric tons of reclaimed water produced per day. 2. 47,000 CMD of reclaimed water produced by Yongkang Water Recycling Center and Anping Water Recycling Center.

Note 1 : Currently, phase one of construction has been completed and 23,000 metric tons of wastewater are being treated per day. Upon completion of the second phase expansion, the total wastewater treatment capacity will reach 36,500 metric tons per day.

Note2 : Currently, phases one and two of construction have been completed and 4,000 metric tons of wastewater are being treated per day. Upon completion of the third and fourth phase expansion, the total wastewater treatment capacity will reach 8,000 metric tons per day.

Note3 : Reclaimed water produced by Anping Water Recycling Center and Yongkang Water Recycling Center is merged into the main distribution sink of TSMC Reclaimed Water Plant at Southern Taiwan Science Park and, along with the reclaimed water produced by TSMC Reclaimed Water Plant, supplied to TSMC for use.

Note4 : The total water supply of 67,000 CMD in 2024 consists of 20,000 CMD from TSMC Reclaimed Water Plant, 37,500 CMD from Anping Water Recycling Center and 9,500 CMD from Yongkang Water Recycling Center.



New Taipei City Gravel Contact Oxidation Treatment and Water Resource Center



Zhonggang Water Resource Center



Linkou Water Resource Center



Water Treatment Plant of Pingtung Agricultural Biotechnology Park



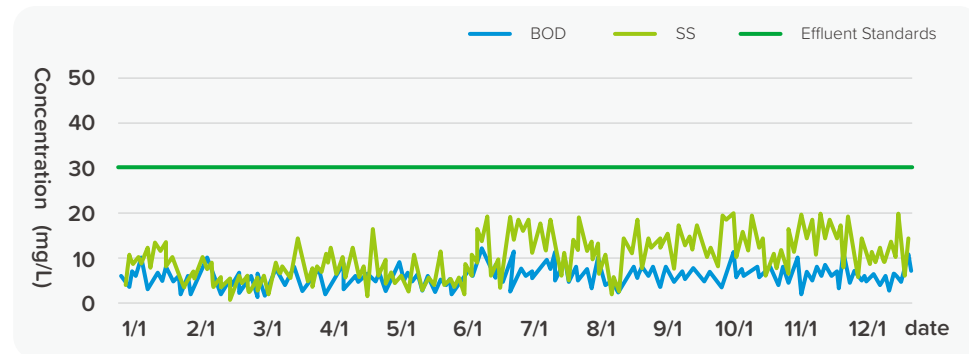
Zhongli Sewerage System (BOT)

Although water quality testing and analyses conducted in laboratories can yield more accurate data for unit status and water quality, the time taken for the tests and analyses is longer. Automatic continuous monitoring systems installed within the water plants were designed to meet the needs of providing real-time insights on the quality of effluent. Through the automatic analysis equipment, water quality data can be obtained much faster, albeit with lower accuracy, to facilitate speedy response and at the same time be made available to the competent authorities and the public for reference. In 2021, through water quality analysis and automatic continuous monitoring, the effluent of Linkou Water Resources Reclamation Center met and was lower than the statutory discharge standard, achieving the goal of environmental protection.

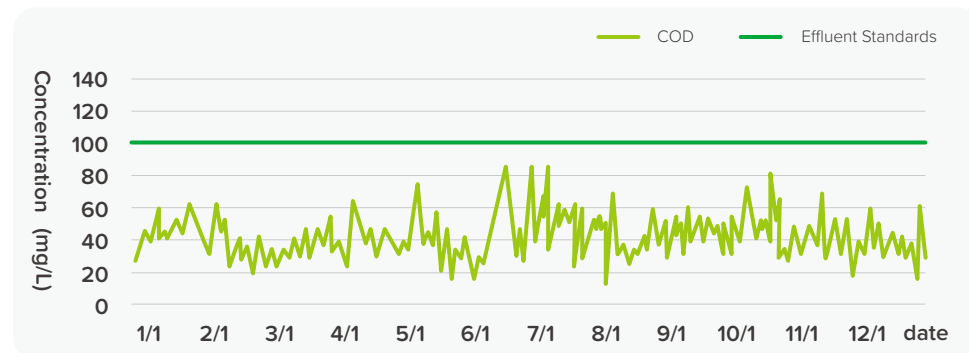


Water quality analysis

● Effluent BOD and SS trend chart for 2021



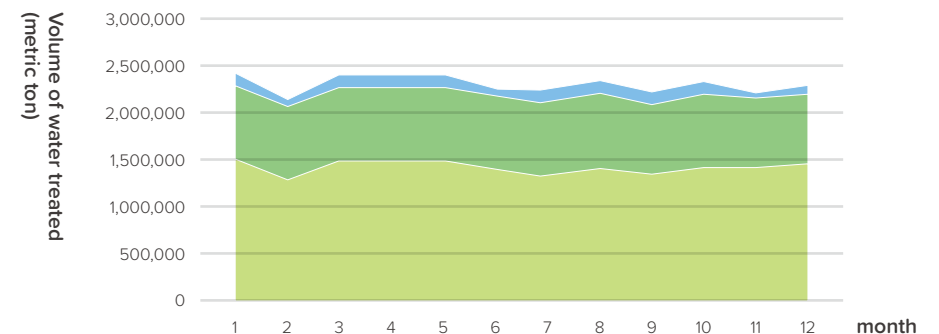
● Effluent COD trend chart for 2021



The Linkou Water Resources Center, which is currently in operation, uses its nine wastewater pumping stations to gather and pump the domestic wastewater in the Linkou area for treatment. After treatment, the effluent which meets the effluent standards is gathered before discharge to the Shuixian stream. On top of replenishing the water source of Shuixian stream and enriching the environmental ecology, the pollution situations of nearby streams (Linkou Stream, Shuiduike Stream, Hengke Stream), due to domestic wastewater which was not collected but simply discharged nearby, were also significantly improved. In the same manner, the New Taipei City Gravel Contact Oxidation Treatment and Water Resource Center have effectively improved the situation of river pollution at Dahan Stream and Xindian Stream, while with providing the public with recreational facilities at the ground level spaces at each of the gravel stations.

When it comes to operations and maintenance, ECOVE strives to protect the environment on top of dedicating efforts towards maximizing the value of resources and sustainability. In 2021, Linkou Water Resources Center, Zhonggang Resource Reclamation Center, and New Taipei City Gravel Contact Oxidation Treatment and Water Resource Center cumulatively treated 27,899,972 metric tons of wastewater and cumulatively reclaimed 51,199 metric tons of effluent (only Linkou Water Resources Center) for internal and external use. Based on the estimation benchmark listed on the "Design and Technique Directions of Buildings Sewage Treatment Facilities" issued by the Ministry of Interior (225 liters of sewage per person per day), it is estimated that the efforts and achievements of ECOVE in wastewater treatment and water resources recycling are equivalent to having served about 124 million people per day, which is equivalent to treating the total amount of wastewater produced by the total population of the country for nearly 5.3 days. In a similar fashion, the amount of water reclaimed is equivalent to the daily water consumption of 228,000 people while treating wastewater, the center can also provide nearly 228,000 people with a day volume of clean water as an alternative to tap water consumption to enhance the sustainable benefits of water resources.

● Wastewater treatment volume in 2021



Solar Power

With attention on global climate change issues intensifying, ECOVE Solar Energy Corporation was founded in 2011 to engage in the development, investment, construction, and operation of solar power generation systems. As of the end of 2021, ECOVE Solar Energy Corporation developed a total capacity of 130MW at home and abroad and, in recognition of its excellent business performances and quality, won a total of 24 gold, silver, bronze, and special awards at the Kaohsiung City Government Photovoltaic Intelligent Building Certificate, two awards at the 3rd Annual Top Solar System Awards by the Bureau of Energy, MOEA, one award at the 4th Annual Top Solar System Awards by the Bureau of MOEA, one award at the 5th Annual Top Solar System Awards by the Bureau of Energy, MOEA, one gold award each at 13th Annual Top 10 Enterprise and Manager Awards, and one award each at the 2017 Outstanding Enterprise and Model Entrepreneurship Award.

Besides continuing to focus on the development of the solar power industry, with strong support from the parent company, ECOVE, and bolstered by solid engineering planning and execution competencies and high-quality manufacturing capabilities, ECOVE Solar Energy Corporation also put in efforts in the installation, operations, and management of solar power systems. As of the end of 2021, the construction of multiple projects with major key partners (THSR, Kaohsiung MRT, Taipei MRT, Taichung MRT, Port of Kaohsiung, Taiwan International Ports Corporation, Tainan City Government, etc.) were completed. The cumulative results are as follows: ground-mounted types (34 MWp), roof-mounted types (50 MWp), and Floating types (5 MWp), totaling a capacity of 89 MWp.

With the successive amendments to the Electricity Act and the Renewable Energy Development Act, the government of Taiwan has fully opened the free trade of renewable energy through direct supply, wheeling, and renewable-energy-based electricity generating enterprises. Having long been a player in Taiwan's solar photovoltaic market, ECOVE Solar Energy Corporation tapped into green electricity trading in 2021 in response to the global trends in net zero emissions and companies' urgent need for green energy, providing the best enterprise solutions to carbon neutrality and net zero emissions. At present, ECOVE Solar Energy Corporation has signed three green power wheeling contracts and is constantly developing partnership with other businesses.



Ground-mounted type

New Jersey, USA
Lumberton Photovoltaic Power Plant 9.5 MWp



Roof-mounted type

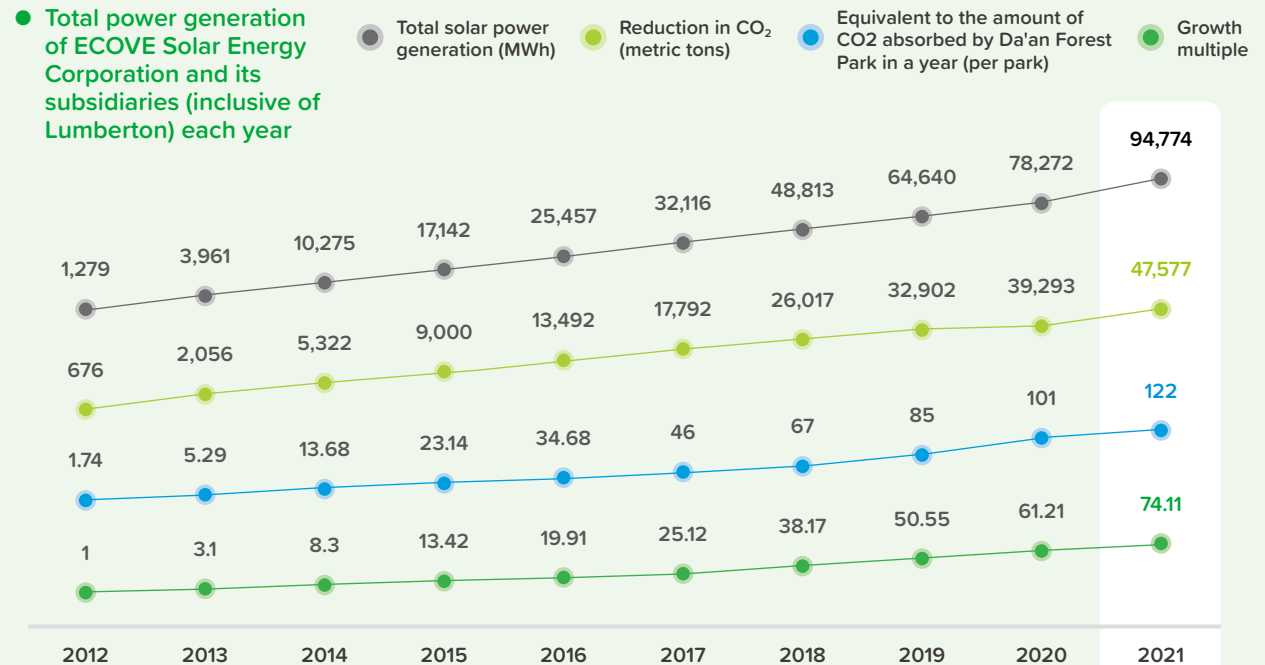
TORAY Plant
1.7 MWp



Floating type

THSR Wurih detention basin
0.3 MWp

Total power generation of ECOVE Solar Energy Corporation and its subsidiaries (inclusive of Lumberton) each year



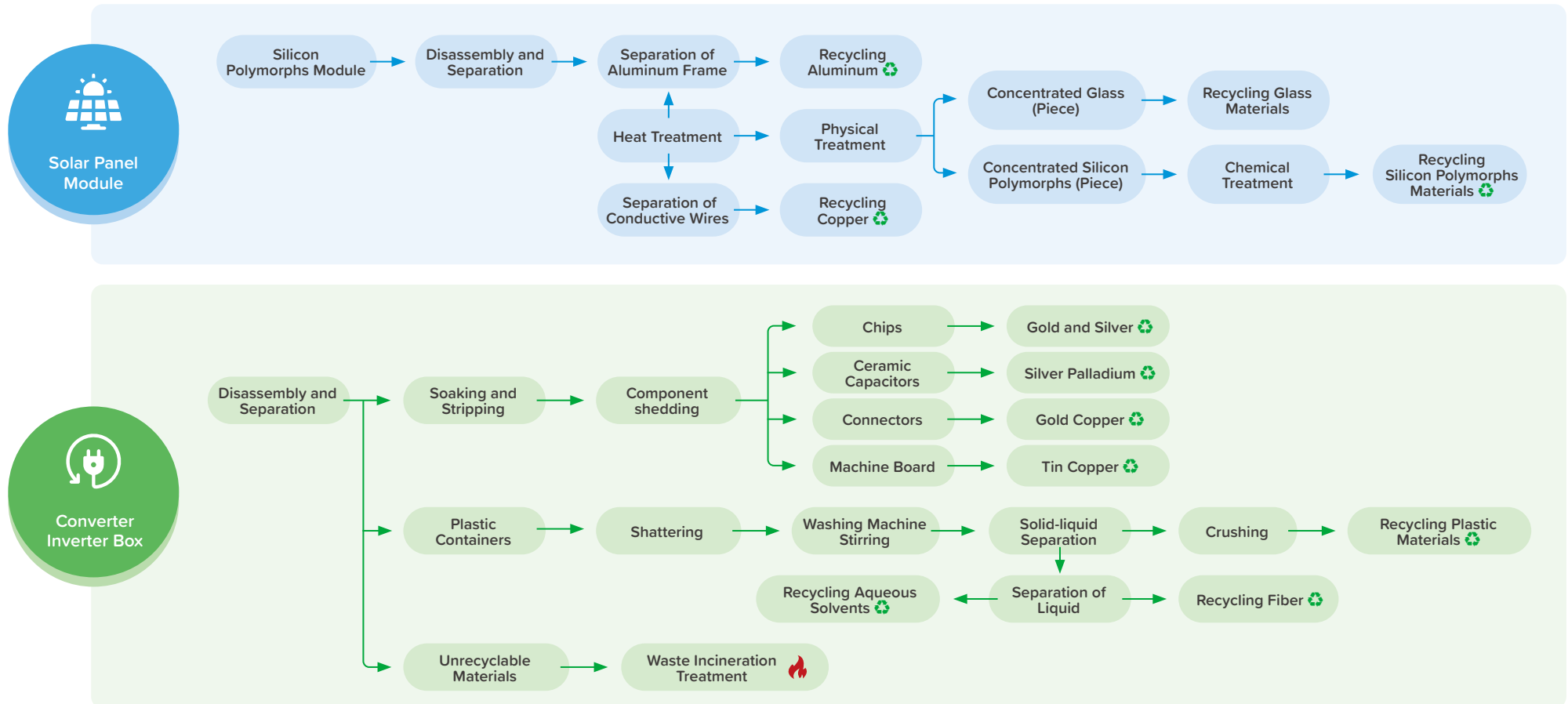
Note : The CO₂e reduction coefficients are based on those published by the Bureau of Energy, MOEA, that is, 0.519 (2013), 0.518 (2014), 0.525 (2015), 0.530 (2016), 0.5 (2017), and 0.509 (2018), and 0.502 (2019) kg CO₂e/kWh, while GWP value is IPCC AR4.

Source of Waste in Solar Power Plants

A solar power plant mainly comprises electrical equipment such as modules, brackets, junction boxes, inverters, electrical boxes, and cables. The main components of a module include 74.2% glass, 10.3% aluminum frame, and 4% battery and its waste treatment shall be in line with the recycling and removal regulations set out by the Bureau of Energy, MOEA. Recycling businesses shall collect and process the modules such that the components are disassembled, sorted, processed, and reclaimed, and materials that have been sorted shall be recycled by different industries. The modules' brackets are

mostly made of aluminum alloy and steel. Aluminum material depletion is low during use and can be recycled 100% as long as it is not corroded. Mature reclamation technologies already exist for electronic waste such as junction boxes, inverters, electrical boxes, and cables, where after dismantling, the aluminum, copper, among other metals can be directly reprocessed, while hard to process composite materials are crushed to reclaim fiberglass materials. Plastics, circuit boards, and polymers commonly used in electrical equipment are difficult to degrade and hazardous waste, and are generally treated by incineration.

Waste Disposal Process at Solar Photovoltaic Plant





Adapting to Climate Changes GRI 201-2

To cope with the impact of global climate change, ECOVE conducts risk and opportunity assessments for climate change in three business areas - Incineration and electromechanical maintenance, renewable energy, and recycling and reuse. ECOVE also regularly identifies sources of risks and their impact, formulates various contingency operation standards to reduce the operational impact caused by risks. In 2020, we adopted the management framework recommended by the Task Force on Climate-related Financial Disclosures (TCFD). In 2021, we continued to comprehensively assess all climate change-related risks for operations to improve our climate resilience.

Climate Governance and High-Level Management

With circular economy as the key development focus, ECOVE's business can be divided into three major fields according to its work attributes: waste management and incineration, renewable energy, and recycling and reuse. ECOVE's "Risk Management Regulations" stipulated the establishment of a "Risk Management Implementation Committee" that reports to the Board of Directors on the relevant risks in the Company's operation every year. Based on the climate change risk factors that its subsidiaries may face in their businesses, risk identification and assessment shall be carried out on climate anomalies such as high temperature, typhoon, thunderstorm, flood, and drought caused by climate change, and corresponding countermeasures shall be formulated.

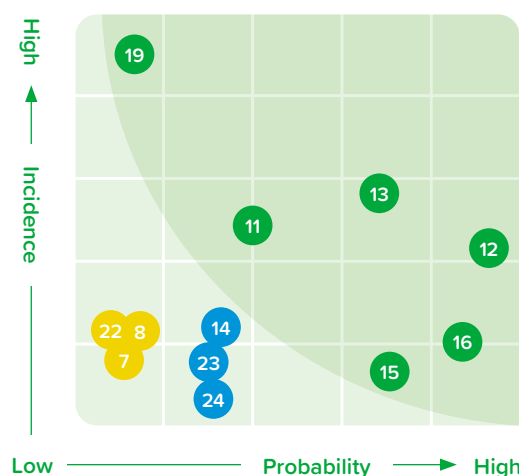
Being an investment holding company, all of ECOVE's relevant investment budgets must be approved by the Board of Directors. At the end of each year, the management team will prepare a report on business operation and business development (inclusive of key development foci, and goals, and development strategies in various areas), to subsequently prepare the next year's business budget, which is then submitted to the board of directors for deliberation. The Company's major future business plans and business development strategies are elucidated to the Board of Directors by the management team, and a consensus will be reached to determine the operating budget for the upcoming year after discussion, inquiries, and proposals at the board meeting.

ECOVE's "Sustainable Development Committee" comprises of three groups, namely corporate social responsibility, environmental protection, and corporate governance, each of which sets its own objectives each year to fulfill corporate responsibility. At the end of each year, the "Sustainable Development Committee" reports to the Board of Directors on the current year's performance and next year's work plan to familiarize the Board of Directors with the Company's goals, performance, and plans in the implementation of corporate social responsibility and corporate governance related to climate issues, so that the Board of Directors can indirectly achieve the purpose of monitoring and supervision.

Risk Identification, Assessment, and Management Strategies

The highest committee responsible for climate-related issues in ECOVE is the Risk Management Executive Committee, which is composed of the Board of Directors, the Chairman, the audit unit, the President, the executive secretary, and the department heads of each subsidiary. Risk management committee meetings are convened regularly on a biannual basis, where post discussion, the Risk Management Committee shall prioritize risk issues and propose countermeasures. In addition, the audit results related to climate change risk of each subsidiary, compilation of material or immediate risk issues, are reported to the Risk Management Executive Committee. The Risk Management Executive Committee shall compile the risk assessment results to be provided as a reference for the audit unit to draw up the annual audit plan. The audit office will report the audit results to the Board of Directors to facilitate the board's monitoring of climate-related issues.

In accordance with the "Risk Management Regulations", ECOVE systematically identifies climate risks that may be faced during operations. Climate risk consists of two major types, transformational and physical, which are further differentiated into regulations, technology, market, reputation, and immediate and long-term. Opportunities are divided into five categories namely, resource efficiency, energy sources, products and services, market, and resilience. The risk and opportunity matrices are evaluated and drawn based on the two consideration factors of incidence rate and impact. After discussion by the Risk Management Committee, the material risks and opportunities which ECOVE may face are determined, and effective actions are adopted to manage risks or harness the possible opportunities so as to strengthen the operational system and competitiveness of the Company and its subsidiaries. Short-term is defined as within a year, medium-term as within one to three years, and long-term as above three years. Incidence rate is divided into seven levels, expressed as percentages. Impact is divided into five levels, and is divided into financial aspects, capacity or service locations, personnel injuries, regulations, consequences of reputation, etc. In pursuit of efficiency optimization, risk management committee meetings are convened on a biannual basis to propose control measures to incorporate climate change issues. With the continuous inspections on the implementation of control measures through audits and inspections, the Board of Directors and managers are able to ensure that risks are effectively controlled.



Type	Source	Level of climate risk
12 :Transition	Air pollution control	High
13 :Transition	Legal proceedings	High
16 :Transition	Change in customer behaviors	High
19 :Physical	Trigger changes in natural resources	High
11 :Transition	Product efficiency regulations and standards	High
15 :Transition	Trigger negative feedback	High
14 :Transition	Bad reputation	Medium
23 :Transition	Change in customer preferences	Medium
24 :Transition	Lack of regulations or legality	Medium
22 :Transition	Uncertainties in market information	Low
7 :Physical	Change in average temperature	Low
8 :Physical	Change in average rainfall	Low



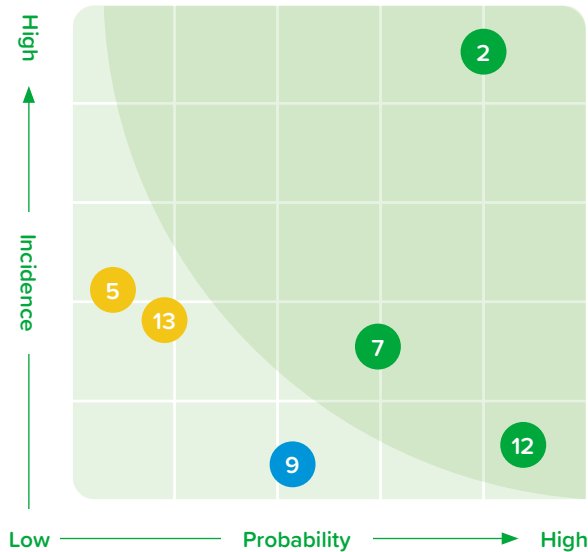
Major risk	Details of risk	Period of incidence	Annual potential financial impact	Management method	Significant financial impact ^{Note1}
 Air pollution control	The best available control technology for fixed sources of pollution or the emission standards or contractual guaranteed values for air pollutants from stationary sources are tightened.	Short-term	Increase in operating expenses due to mandatory outsourcing of renewable energy by laws and regulations.	Prepare corresponding budgets in advance according to the amount of chemicals added in newly-built plants or remodeled commissioning plants.	-
	The government has been actively advocating "clean transportation" and to use low- or zero-polluting transport equipment instead. Currently, since the latest emission standards for diesel vehicles were published in 2014, newly purchased vehicles must meet the latest emission standards.	Long-term	Increase in capital expenditures due to the replacement of new environmentally-friendly vehicles.	Upgrade vehicles to new environmentally-friendly vehicles year by year. Currently, 11 tractor heads are environmentally-friendly vehicles while the remaining two tractor heads are old ones that need to be replaced. The replacement is expected to be completed within two years	-
 Legal proceedings	Violation of air pollution control laws.	Short-term	Increase in operating expenses due to related expenses of derivative litigation, such as taxes, fees, fines, etc.	Formulate SOPs and management review systems, and extend these horizontally to project implementation controls to reduce the risk of fines.	-
 Change in customer behaviors	In response to the rising awareness of sustainability among government agencies, the requirements for air pollution emission values of new or remodeled incineration plants in the future are lowered.	Long-term	Increase in operating expenses due to related expenses of derivative litigation such as taxes, fees, fines, etc.	For incineration processes, catalytic reduction reactors such as SCR, are installed to remove nitrogen oxides and reduce air pollution emission.	-
	If the production process of waste is changed, the output and composition of waste will be affected With the decline of oil price, and market supply and demand, customers' demand for product concentration and quality may be affected.	Long-term	Reduction in revenue if unable to operate production or the volume of receiving and treatment decreases.	Select the most appropriate technologies through evaluations.	-
	Policy changes cause declines in wholesale price year by year.	Medium-term	Reduction in revenue due to policy changes that cause declines in wholesale prices year by year.	Seek long-term stable cooperation with owners and expand investment opportunities into overseas markets.	-



Major risk	Details of risk	Period of incidence	Annual potential financial impact	Management method	Significant financial impact ^{Note1}
<p>Trigger changes of natural re-sources</p>	The materials used in the main processes are dependent on natural resources. Natural disasters may lead to inadequate water supply and insufficient chemical supply, thereby affecting the production capacity of the processes, or even disrupting the processes, thus impacting the amount of waste treated and electricity sales.	Long-term	Increase in operating costs owing to price hikes of chemicals or use of higher-priced alternatives, which resulted from insufficient production of chemicals due to climatic factors.	If there is a forecast of natural disasters, increase the inventory of relevant chemicals and water in the plants as soon as possible. Establish a multi-supplier supply chain and develop or establish a second water supply channel.	-
<p>Product efficiency regulations and standards</p>	Amendments to renewable energy power generation facilities management regulations.	Medium-term	Reduction in revenue due to the possibility of decrease in identified changes in electricity sales rate.	New technologies and high-efficiency equipment are used in the construction of plants to improve the operating efficiency of the plants.	-
	According to the characteristics of the product, solar cells are confirmed to have the characteristics of safety, high efficiency, durability, and reliability.	Long-term	Increase in operating costs due to increased risk of product failures as a result of unstable product reliability; increase in operating expenses due to related expenses of derivative litigation such as taxes, fees, fines, etc., if waste materials are not handled in accordance with regulations.	Solar cells should have the characteristics of safety, high efficiency, durability, and reliability. Vendors which are certified to meet the requirements of "Taiwan Solar Cell Technical Specifications" of the Bureau of Standards, Metrology and Inspection, MOEA would be given priority when module materials are being procured. In addition to the materials approved by the Bureau of Standards, Metrology and Inspection, MOEA, the operation of the solar power plant shall be insured with property liability insurance for each project to prevent major economic losses caused by emergencies.	-
<p>Trigger negative feedback</p>	Reduction in regional air pollution control, causing the reduction in treatment efficiency.	Short-term	Reduction in revenue due to negative impact from product sales.	Formulate contingency SOPs, change operating patterns and adopt off-peak operations or prepare budgets based on the situation in recent years to avoid the risk of revenue shortage.	-
	If punished by the competent authority, the company's brand image may be affected.	Long-term	Reduction in revenue due to tarnished brand image.	Three levels of management and audit supervision.	-
	For setting up of solar power plants by G.D. Development Corporation, ecological issues tend to cause environmental impact during the assessment stage of ground-mounted or water-surface types of solar power plants.	Medium-term	Increase in operating expenses due to specialized studies in regulations and environmental issues to cope with extended regulatory issues and environmental risk considerations for the solar energy industry, local government policies and measures, petitions by the public, etc.	Support manufacturers who take climate change seriously, adjust procurement policies and choose products from green supply chains, and products with carbon reduction.	-

Note 1: Significant financial impact refers to those whose impact amount exceeds 5% of the consolidated net pre-tax profit in 2020.

Note 2: For physical risks, scenarios used in the estimation of financial impacts are RCP4.5, 6.5 and 8.5. For transition risks, there are no specific scenarios; instead, the existing regulations are used to estimate financial impacts.



	Climate opportunity	Level
2	Funding sources	High
7	Production process	High
12	Participation in public works	High
9	Transport model	Medium
5	New business opportunities	Low
13	Alternative or diversified resources	Low

Major opportunity	Details of opportunity	Period of incidence	Annual potential financial impact	Management method	Significant financial impact ^{Note1}
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<p>Develop funding sources</p>	<p>With global attention on the environmental protection industry, seek investor capital to expand a more diversified business.</p>	<p>Long-term</p>	<p>Decrease in operating costs due to the issuance of green bonds; increase in revenue due to business expansion with an enhanced corporate image.</p>	<p>Issuance of green bonds.</p>	<p>-</p>
<p>Production Process</p>	<p>Use of sodium-based alkali or high-efficiency agents to remove acid and reduce reaction products.</p>	<p>Short-term</p>	<p>Decrease in operating costs due to productions with reduced energy consumption or increased utilization rate.</p>	<p>Formulate SOPs complemented with operational information management systems to review the efficacy of deacidification of chemicals.</p>	<p>-</p>
<p>Participation in public works</p>	<p>Provide "energy from waste (EfW) and efficiency improvement services" in line with circular economy standards, and was awarded the world's first BSI 8001 certificate.</p>	<p>Long-term</p>	<p>Increase in revenue due to successful tenders based on the provision of "energy from waste (EfW) and efficiency improvement services" when competitive biddings are open for the overhaul and maintenance of incinerators in various locations.</p>	<p>To unceasingly innovate and enhance performance to become the most reliable provider of indus-try-leading " resource cycling " services.</p>	<p>√</p>

Note 1 : Significant financial impact refers to those whose impact amount exceeds 5% of the consolidated net pre-tax profit in 2020.



Climate Indicators and Targets

The industry ECOVE is in is highly related to the sustainable development of the environment. At ECOVE, most incentive mechanisms are directly/indirectly related to climate change. These incentive mechanisms are linked to improvements of waste volume, energy generation of incineration plants, operating rate and water conservation, energy conservation, energy-saving resources, efficiency improvement (including labor saving) among other proposals. Further, when our subsidiaries participate in related external assessments and were recognized in e.g., National Corporate Environment

Protection Award, EPA assessments, energy saving and carbon reduction related medals, and other index environmental protection awards, bonuses were also given as a form of encouragement. Relevant key performance indicators (KPI) have been established by subsidiaries such as incineration capacity, incoming capacity, chemical usage for pollution control, output of waste generated, post-treatment exhaust emission concentration, and cumulative solar power parallel connection (MW), etc. to continuously monitor and review their rationality.

The indicators used by ECOVE to analyze climate potential and potential impacts include (a) tropical cyclone determined by wind speed: Taking ECOVE Environment Service Corp. for example, the current tropical cyclone is assessed by wind speed level and duration to determine whether to disconnect or reduce load operations (e.g., Wurih Plant has an average wind speed of 15 m/s lasting more than 5 minutes); (b) general operation status: measure wind speed, air temperature, and wind direction; wind speed, air temperature, and wind direction are monitored values during normal operation.

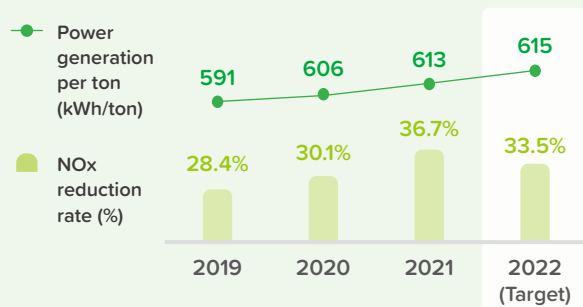
During the operation of incineration plants, the risks related to greenhouse gas emissions include

- **Scope 1 :** Emissions will be affected by changes in the amount of waste entering the plants during the year, the nature of the waste, and the actual heating value.
- **Scope 2 :** Main emissions are those generated by purchased electricity, which is related to the operation of the incinerator for the year. If the efficiency of the power generation is good in a year, there is no need to purchase electricity, and correspondingly the risk of emissions is relatively low.

Environmental targets

● Incineration and electromechanical maintenance

KPIs have been established to manage and conduct monthly reviews. Taking data from 2021 as an example, the reduction rate of nitrogen oxides (NOx) is about 6.6% more than that in 2020 while the unit waste power generation increased by 7 kWh/ton. The relevant data are as follows :



● Renewable energy

The 2022 target is to reduce GHG emissions by 49,800 tons, based on the amount of electricity generated by existing solar power equipment.

● Recycling and reuse

Since the second half of 2019, the power consumption per unit of waste IPA in 2021 was 61.06 kW/T (met), and the target for 2022 is 60.14 kW/T; the water conservation of power consumption per unit of waste IPA in 2021 was 0.306 m³/T (met), and the water conservation target for 2022 is 0.301 m³/T. ECOVE Waste Management Corp. has no relevant reduction targets at present.



ECOVE passes the highest level of TCFD audit, Striding toward a new page in sustainable development

ECOVE took active steps to put into practice the sustainable development of the Company and became the first in Taiwan from the environmental resource-related industry to pass the Task Force on Climate-related Financial Disclosures (TCFD) Climate related Financial Disclosure Conformity Statement audit by international standards authority, British Standard Institution (BSI), and also achieving the highest grade of "Excellence."



ECOVE passed the "TCFD - Task Force on Climate-related Financial Disclosures Compliance" audit and awarded the highest grade of "Excellence."

Mitigating Environmental Impact

GRI 305-5, 306-4 ; SASB IF-WM-110b.1 ; IF-WM-000.B

Energy and Resource Conservation

Every year, incineration plants operated by ECOVE Environment Service Corp. continue to change the lights in the administrative buildings, plant areas, replace street lamps with energy-saving LED lamps, and improve the lighting or air conditioning in the plants. Energy saving measures taken in 2021 are as follows: Keelung Plant installed a shock pulse generator (SPG) to replace the shutdown cleaning with mobile shock pulse cleaning; Southern Taoyuan Plant

underwent baghouse dust collection differential pressure improvements; at Wurih Plant, the cooling water tower fans were updated; Chengxi Plant replaced air-cooled condenser fan motors and instrument air compressors. With the implementation of power saving measures over the years, a total of approximately 3,560 metric tons of CO2 equivalent were reduced in 2021.

Specific power saving measures and results of ECOVE Environment Service Corp. over the years

Plant	Power-saving measures	Power saved per year after improvement (kWh)	Reduction in carbon emission per year (kg CO ₂ e)
Keelung	Plans to change fan control type to inverter control type	522,432	262,261
Keelung	Increase the set temperature of air conditioning in the plant	273,600	137,347
Keelung	Install a shock pulse generator (SPG) to replace the shutdown cleaning with mobile shock pulse cleaning	2,918,400	1,465,037
Keelung	Replace lighting with LED lighting	73,927	37,111
Keelung	Street lamps within plant compounds to be upgraded to LED lights	657	330
Keelung	Improvement in lighting at waste dumping platform	66,720	33,493
Southern Taoyuan	Baghouse dust collection differential pressure improvements	1,180,537	592,630
Southern Taoyuan	Replace lighting with T5 tubes	17,520	8,795
Southern Taoyuan	Switch on ventilation fans by zones	128,909	64,712
Southern Taoyuan	Air compressor energy-free drainage equipment	602,779	302,595
Houli	Replace evacuation direction indicator fluorescent lamps with LED lamps	10,849	5,446

Plant	Power-saving measures	Power saved per year after improvement (kWh)	Reduction in carbon emission per year (kg CO ₂ e)
Wurih	Replace street lamps within plant compounds to LED street lamps	19,000	9,538
Wurih	Replaced cooling tower fan units	45,000	22,590
Chengxi	Replace air-cooled condenser fan motors	766,800	384,934
Chengxi	Replace instrument air compressors	332,880	167,106
Chengxi	Replace air-cooled condenser lighting with LED lighting	3,154	1,583
Chengxi	Change original T8 fluorescent lamps in the plant to T5 type lighting	12,614	6,332
Tainan Science Park	Replace lighting within plant compounds and offices with T5 or LED lighting	77,889	39,100
Tainan Science Park	Reduce number of street lamps at night from 28 to 10	17,784	8,928
Tainan Science Park	Adjust operational hours for ventilation fans in plant	13,578	6,816
Tainan Science Park	Replace non-inverter air conditioning with inverter air conditioning for offices	2,600	1,305
Tainan Science Park	Replace ten street lights with LED lights	4,307	2,162

Note 1 : "Reduction in carbon emission per year" is calculated based on the coefficient of 0.502 kg CO₂e per kWh emission as published by the Bureau of Energy, MOEA in 2020.



In an effort to optimize the entire transport process, ECOVE Waste Management Corp. maps out the most optimal routes to reduce GHG emissions. For the 24 vehicles in its waste removal fleet, plans were put in place in 2012 to progressively purchase Phase 5 standards environmentally-friendly vehicles. As of the end of 2021, 17 of such vehicles were purchased, with another three expected to be purchased in 2022. According to statistics, in 2021, the proportion of fuel used by the Phase 5 standards environmentally-friendly vehicles operated by ECOVE Waste Management Corp. accounted for 86% of the total fuel consumption of the year, and the reduction in black smoke emissions was estimated at 35%.

● Performance of ECOVE Waste Management Corp.'s eco-friendly vehicles in environmental impact reduction

Item	Unit	2018	2019	2020	2021
Fleet size of waste removal vehicles (number of vehicles)	Number of vehicles	23	22	23	24
Diesel consumption of operating vehicles	Liter/year	194,181	199,692	233,101	283,576
Diesel consumption of Phase 5 standard vehicles	Liter/year	90,635	142,595	189,217	242,533
Total fuel consumption of all vehicles (billion joules)	Billion joules	7,165	7,369	8,601	10,464
Ratio of diesel consumption from Phase 5 standard vehicles to annual consumption (%)	%	46.68	71.41	81.17	85.53
Ratio of diesel consumption from Phase 5 standard vehicles to annual consumption (%)	%	19	29	33	35

Note 1: Pursuant to Vehicular Air Pollutant Emission Standards, the emission standard for Phase 5 vehicles' black smoke pollution level is 15% while that of Phase 4 vehicles is 25%.
 Note 2: Proportion of diesel consumption in the current year for Phase 5 vehicles (A) = Diesel consumption of Phase 5 vehicles / Diesel consumption of operational vehicles × 100%
 Note 3: Proportion of reduction in black smoke emission in the current year = (Emission standard of Phase 4 vehicles' black smoke pollution level - Emission standard of Phase 5 vehicles' black smoke pollution level) / Emission standard of Phase 4 vehicles' black smoke pollution level × A

Wastewater and Waste Management

ECOVE, in line with the government's sustainable development policy, is actively moving towards the goal of resource reuse. At the same time, in consideration of international issues including the conversion and sustainable utilization of the Earth's energy resources and GHG, we will strive to promote the concept of embracing the 6R of environmental protection in our daily lives and to implement the 6R management of waste we produce. ECOVE delves into how to Reduce waste - incorporating environmental education promotion into the prerequisite elements of the decision-making for interactions between corporate and communities, placing emphasis on the implementation of environmental education to reduce waste at source; Recycle waste - reclaiming and treating discarded items, recycle and reuse; Repair used items - adopting new technologies and integrating existing technologies to enhance efficiencies; Refuse products which do not conform to the concept of environmental protection - choosing green products; Reuse items - reducing or eliminating waste emissions during the process; and Redesign - improving performance and recycling as design considerations, and reducing final waste as circular economy concept (from cradle to cradle, C2C).

● 6R

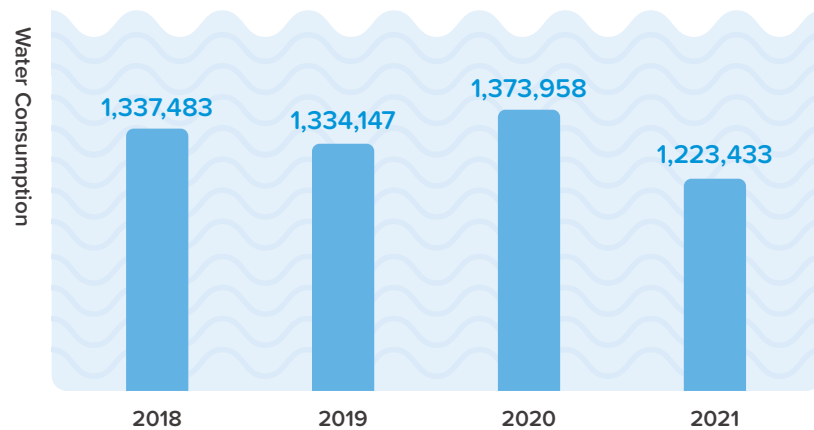


Practice

- Make use of environmental education facilities of the five incineration plants to organize resource management and environmental sustainability educational activities in the local communities. Through these interactions with local communities, share the concepts of resource utilization and waste reduction at the source to ensure that future generations have utilizable resources and a sustainable environment.
- Develop paperless office operation platforms (ECOVE official website: electronic bulletin system, MHI working hours management systems, PRS purchase order management systems, operation information management systems, WebSMS, electronic inspection systems, DHL electronic handover book).
- Disseminate information electronically as much as possible to reduce the use of paper, for example, reservation systems for meeting rooms and company vehicles, and electronic copies of monthly reports from various plants (plants were originally required to submit hard copy reports to the plant affairs department on a monthly basis. However, soft copies are now used to save costs in photocopying and mailing, as well as storage space), and promote the recycling of old printouts.
- After equipment maintenance and repair, the residual materials such as iron, galvanized iron, lubricants, etc. are classified and gathered, stored in appropriate containers, and managed by zones before being entrusted to the subsequent recycling units for disposal to achieve recycling of waste.
- Promote green procurement, selecting products with environmentally-friendly labels such as toner cartridges, energy-saving equipment, energy-saving goods.
- Continuously use Maintenance Management Information System (MMIS) to effectively control the life cycles of equipment to overhaul key parts in a timely manner so as to prolong the lifespan of equipment.
- With the aim of improving energy efficiency, Project Department 1 is mainly responsible for the assessment of the overhaul of the incineration plants, elevating the performance of each plant, and the extension of service among other duties.

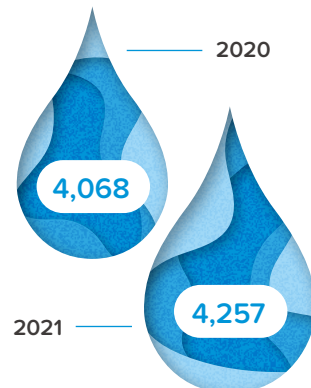
100% of the water used by incineration plants operated by ECOVE Environment Service Corp. is tap water. Water is predominantly used in the production of boiler pure water or soft water required for the processes. When waste is incinerated, the process-derived wastewater, carwash wastewater, domestic wastewater from employees are all channeled towards the sewage treatment systems within the plants for treatment to meet the designated standards before being discharged into the recycling systems within the plants (for cooling of flue gas), thus achieving the goal of 100% recycling and "zero wastewater discharge."

● Total water consumption in each plant (metric tons)

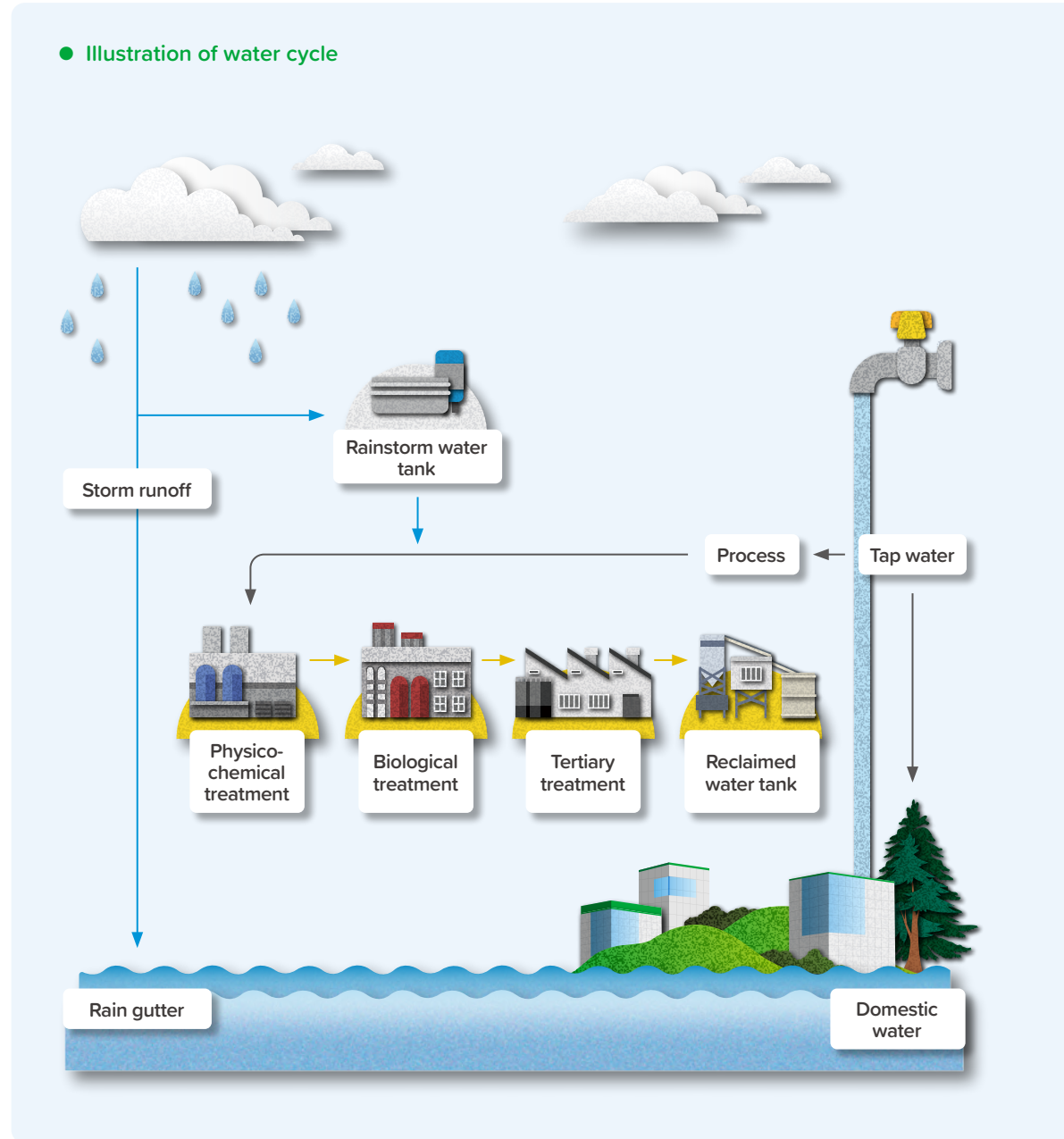


Water used in the operations at ECOVE Solvent Recycling Corp. is mainly used for cooling systems, and the source of water is 100% tap water, so there is no significant impact on the water source. In addition, the wastewater produced by the distillation of waste solvent will be treated by the wastewater treatment facilities set up within the plant. After adjustment, neutralization, aeration, and sedimentation, the wastewater can meet the standard for discharge into sewerage in the industrial zone, and 100% is discharged into the sewerage to be channeled to the sewage treatment plants in the industrial zone.

● Total water consumption for ECOVE Solvent Recycling Corp. (metric tons)



● Illustration of water cycle





Participation in Public Infrastructure

As the leader in waste treatment in Taiwan, ECOVE Environment Service Corp. continues to properly treat both general waste and general industrial waste for the Taiwanese society. On top of achieving excellent results in the operations and management of waste incineration plants, ECOVE Environment Service Corp. also sold power produced from waste incineration

back to Taipower as part of the contribution towards energy conservation and carbon reduction for the planet. Beyond waste incineration, ECOVE Environment Service Corp. also relies on core competencies to provide maintenance service for various public infrastructure, including public transport systems, air transport systems, water resources, and wastewater treatment, etc.

Public Service Projects in 2021



Incinerator and Waste Treatment

- Keelung City Incineration Plant
- Taoyuan City Biomass Center build-operate-transfer (BOT) project
- Taoyuan County Southern District BOO Incineration Plant
- Operations and maintenance of incinerators at Taoyuan International Airport Waste Treatment Facility
- Miaoli County BOT Incineration Plant
- Taichung City BOT Wurih Incineration Plant
- Taichung City Houli Incineration Plant
- Xizhou Waste Incineration Plant
- Tainan City Chengxi Incineration Plant
- Kaohsiung City Gangshan Incineration Plant
- Southern Taiwan Science Park, MOST - Tainan Science Park Resource Recycling Center
- 2021 annual maintenance of incinerator and technical service improvements for Kaohsiung City Central Zone Resource Recycling Plant
- 2021 annual facilities maintenance and professional service for refuse waste crane operations at Kaohsiung City Southern Zone Resource Recycling Plant



Public Transportation

- Danhai Light Rail Train utilities, fire fighting equipment, and air conditioning maintenance
- Taoyuan MRT station flood gate maintenance
- Equipment maintenance for Kaohsiung MRT utilities, environmental control, and power supply at red and orange lines



Air Transport

- Replacement of electrical equipment in the terminals at Taipei International Airport (closed in March 2021)
- Air bridges replacement at Terminal 1 of Taoyuan International Airport
- Technical service for air bridge installation at Terminal 3 of Taoyuan International Airport
- Operation and maintenance of the electrical system equipment at the 161KV main substation of Taoyuan International Airport and the 11.4KV main switch station of Terminals 1 and 2



Water Resources and Wastewater Management

- Operations and maintenance agreement for New Taipei City Linkou Water Resource Center
- Sludge drying turnkey project of Linkou Water Resource Center, New Taipei City
- Operations and maintenance of New Taipei City Gravel Contact Oxidation Treatment and Water Resource Center for 2019-2021
- Plant equipment life extension and energy-saving improvement works at Kaohsiung Central Zone Wastewater Treatment Plant
- Installation of 500mm HDPE and equipment maintenance at the Pingtung Agricultural Biotechnology Park of Council of Agriculture, Executive Yuan (July 2021~November 2021)
- Operations and maintenance of Pingtung Agricultural Biotechnology Park of Council of Agriculture, Executive Yuan, water purification plant, and power center
- Replacement of sludge systems equipment project at the Pingtung Agricultural Biotechnology Park of Council of Agriculture, Executive Yuan (closed in March 2021)



Others

- Taoyuan City North District general waste removal and disposal outsource plan by Department of Environmental Protection, Taoyuan City Government
- Caotun Township general waste removal and disposal outsource plan in Nantou County
- Outsourced operations of Zhonggang Fumigation Treatment Plant from Taichung Branch of Bureau of Animal and Plant Health Inspection and Quarantine, Council of Agriculture, Executive Yuan
- Outsourced operations of Kaohsiung Port Health Inspection Center from Kaohsiung Branch of Bureau of Animal and Plant Health Inspection and Quarantine, Council of Agriculture, Executive Yuan
- Air conditioning system operations and maintenance for Kaohsiung Veterans General Hospital
- Purchase and maintenance, management, and operations of mobile environmentally-friendly joss paper burner in Tainan City

Note: For solar power, please refer to the chapter on "Circular Economy and Low-carbon Economy"

Most Reliable



ECOVE received the "Annual Enterprise Environmental Protection Awards" for its outstanding performance in ESG

Among the winners of the "3rd Annual Enterprise Environmental Protection Awards" (AEEPA), the highest honor for enterprises' environmental protection performances in Taiwan, Miaoli Plant, Keelung Plant, Houli Plant, and Chengxi Plant operated and managed by ECOVE received the gold, silver, and bronze medals; in particular, Miaoli Plant won the gold for a third consecutive year and also received the "Environmental Protection Honor Award." As a responsible corporate citizen, ECOVE has taken the responsibility of assisting the government in promoting environmental protection. Through the preliminary, secondary, and final selections, the winners of the "3rd Annual Enterprise Environmental Protection Awards" were commended in recognition of their devotion and contribution to environmental protection.

At Miaoli Plant, we set 20 key performance indicators in the six aspects (i.e., air pollution prevention and control, incineration waste management, green operation and living, environmental protection expenditure and results, and environmental education) of the established environmental sustainability roadmap to keep track of our progress towards the long-term development goal, that is, to create a clean and prosperous homeland in Miaoli.

Focusing on the improvement and enhancement of waste incineration treatment efficiency, Keelung Plant used big data analytics to promote smart operations in equipment, process, and management, so as to reduce the consumption of energy and resources and improve energy efficiency. Keelung Plant has been ranked the first place in the nationwide EPA's Incineration Plant Evaluation for three consecutive years.

Houli Plant performed remarkably well in reducing pollutant emissions and improving energy efficiency (e.g., semi-dry smoke scrubbers and SNCR). It also introduced big data analytics to optimize system performance and efficiency, reduce emissions, and stabilize acid gas emissions. In addition, each energy-saving and carbon-reduction measure was reviewed one by one, ranging from the replacement of inverter control to the addition of photoresistor to control the opening and closing of street lights. In 2020, the energy saving results of Houli

Plant were remarkable, with the electricity consumption per unit of waste seeing a 20% decrease or more.

With sound epidemic prevention measures put in place, Chengxi Plant continued to impart knowledge of incineration and electromechanical maintenance, renewable energy, and recycling and reuse to local elementary school students in line with the "Step by Step: Factories for Sustainable Environmental Education." It also signed memoranda of understanding (MOU) with local communities to promote environmental education and sustainability.



Group photo of ECOVE and other winners of AEEPA and the Minister of Environmental Protection Administration Tzi Chin Chang (third from left)



Message
from Chairman

Overview

Corporate
Governance

Environmental
Sustainability

Social
Co-prosperity

Appendix

Social Prosperity

We are committed to investing resources in each year toward long-term advocacy for a friendly workplace, a safety and healthy work environment, and to carry out environmental protection education, so that ECOVE's values are not limited to industry net worth.

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Most Reliable

Performance Highlights

OSH promoter

OSH promoter at Southern Taiwan Science Park unit - Tainan Science Park Plant

Performance Award

Occupational Safety and Health Excellent Employee Award_ Performance Award from the Ministry of Labor

Healthy Workplace Certification

Ministry of Health and Welfare in Healthy Workplace Certification Health Promotion Label

Healthy Family Core Award

Ministry of Labor Assistance in Promoting Safety and Healthy Family Core Award

Outstanding Engineer Award

R.O.C. Environmental Engineering Society in Outstanding Engineer Award, Outstanding Young Engineer Award

5 environmental education facilities certification

Environmental Protection Agency in 5 environmental education facilities certification - Keelung Plant, Miaoli Plant, Houli Plant, Tainan Plant, and Tainan Science Park Resource Recycling Center Plant



Talent Caring

ECOVE ceaselessly creates a happy and friendly workplace for all employees. ECOVE offers employee training in line with business development and employees' career planning, so that both ECOVE and employees can grow and thrive together and develop a sustainable future for years to come.

Talent Composition and Remuneration

GRI 102-8, 102-36, 201-3, 202-2, 401-1, 404-3, 405-1~2

Employee Composition and Distribution

ECOVE is focused on circular economy on top of dedicating efforts in the area of recruitment and nurturing of professionals. In 2021, there were a total of 891 employees (excluding overseas employees, interns, and directors). Due to the field and nature of the business, employees are predominantly male, accounting for 80.6% of the total. In terms of the types of employment, most of our employees are full-time employees, accounting for 98.0% of the total. In Taiwan, ECOVE employs only one foreign graduate while the rest of the employees are local Taiwanese talents, essentially creating employment opportunities in Taiwan.

Gender distribution for managerial and non-managerial roles in 2021

Role	Gender	Female	Male
Managerial		12	149
	Engineering	25	131
Non-managerial	Technical	43	430
	Others	92	9

Managerial roles : supervisors with ranks above foreman.

Non-managerial roles : Engineering - personnel who are engineers; Technical - on-site operation technicians; Others - such as financial, accounting, legal, auditing, human resources, administrative and clerical personnel.

Statistics on number of employees and gender

		2019		2020		2021	
Full-time employees	Number of employees	588	129	653	148	707	166
	Percentage (%)	72.1	15.8	79.6	18.0	79.3	18.7
Part-time employees *	Number of employees	78	20	14	6	12	6
	Percentage (%)	9.6	2.5	1.7	0.7	1.3	0.7
Total	Number of employees	815		821		891	
	Percentage (%)	100.0		100.0		100.0	

30 years (incl.) and below	Number of employees	79	21	65	21	62	20
	Percentage of total employees (%)	10	3	7.9	2.6	7.0	2.2
31-50 years old	Number of employees	443	116	450	116	472	128
	Percentage of total employees (%)	54	14	54.8	14.1	53.0	14.4
51 years (incl.) and above	Number of employees	144	12	152	17	185	24
	Percentage of total employees (%)	18	1	18.5	2.1	20.7	2.7

*Part-time employees refer to contract or outsourced workers.

* There was one intern in 2021.

New Employees and Turnover

There were 165 new employees in 2021, accounting for 18.5% of all employees. The new employees were mostly males, accounting for 80% of the total new employees. In terms of age distribution of the new employees, most are aged between 31 to 50. As for

resignations, there were 71 personnel who left the Company, accounting for 8% of the total employees. This is within the 2025 target range of 5-8% set in 2019. In addition, there were two personnel who met retirement criteria and applied for retirement.

● Age and gender distribution of new employees over the past three years

		2019		2020		2021	
30 years (incl.) and below	Number of new employees	26	8	25	7	31	9
	Percentage of total employees (%)	3	1	3.0	0.9	3.5	1.0
31 - 50 years old	Number of new employees	38	17	47	11	79	22
	Percentage of total employees (%)	5	2	5.7	1.3	8.8	2.5
51 years (incl.) and above	Number of new employees	5	0	8	0	22	2
	Percentage of total employees (%)	1	0	1.0	0	2.5	0.2
Number of new employees and percentage of total number of employees	Number of new employees	94		98		165	
	Percentage of total employees (%)	12		11.9		18.5	

● Age and gender distribution of employee turnover in the past three years

		2019		2020		2021	
30 years (incl.) and below	Number of employee turnover	18	5	12	1	8	4
	Percentage of total employees (%)	2	1	1.5	0.1	0.9	0.4
31 - 50 years old	Number of employee turnover	32	7	30	7	39	5
	Percentage of total employees (%)	4	1	3.7	0.9	4.4	0.6
51 years (incl.) and above	Number of employee turnover	9	1	5	0	15	0
	Percentage of total employees (%)	1	0	0.6	0	1.7	0
Number of employee turnover and percentage of total number of employees	Number of employee turnover	72		55		71	
	Percentage of total employees (%)	9		6.8		8.0	

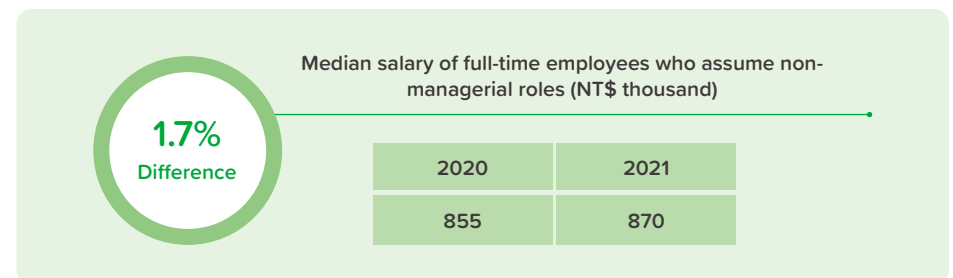
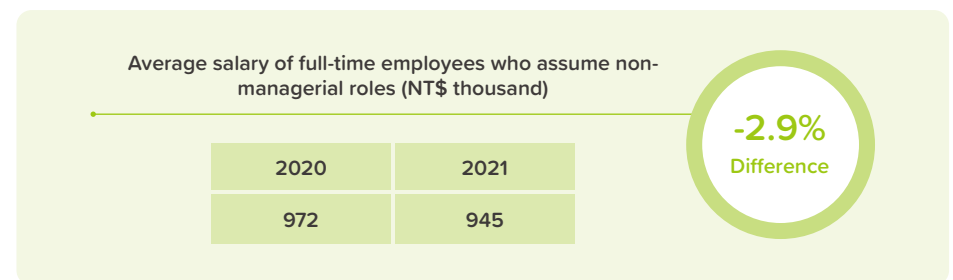
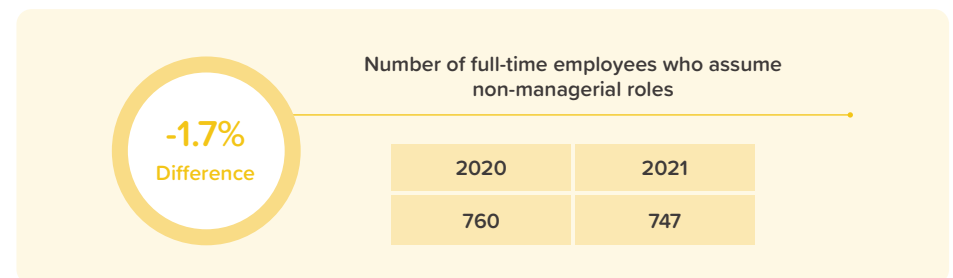
Promotion and Remuneration

ECOVE offers fair and competitive remuneration to attract, retain, and motivate outstanding talents. We conduct annual performance evaluations for employees who have passed the probation every September. Employees who have not passed the probation will be evaluated as new recruits after the probation expires. We base salary adjustments and bonus payment on employees' personal performance, fulfillment of responsibility, and potential for development. Standards for salary adjustments and bonus payment do not differ based on the type of employment, gender, or age. We also conduct salary surveys to ensure that the overall compensation we offer is competitive in the job market. In terms of career development, the Company provides employees opportunities for cross-departmental competencies and learning development and consults employees on their willingness before internal rotations are conducted. In the event that there is a need to transfer employees due to business needs

or employees voluntarily seek for a transfer, both parties will spend time together to negotiate and discuss so that sufficient preparations and adjustments for business arrangements and employee preparations can both be achieved. Should there be significant operational changes, employees would be notified in advance within the time limit prescribed by law and regulations. All of the above efforts are made in pursuit of deploying the right people in the right places. In 2021, the ratio between the annual total income of the highest-paid individual and the median annual total income of other employees is 10.48. As the annual total income of the highest-paid individual in 2021 was less than that in 2020, coupled with salary adjustments for other employees, the ratio between the percentage increase of the annual total income of the highest-paid individual and the median percentage increase in the annual total income of other employees was -0.05.

		2021 (Monthly base salary ratio)	2021 (Annual remuneration ratio)
Managerial		0.94	0.94
Non-managerial	Engineering	1.22	1.35
	Technical	1.22	1.37
	Others	1.10	1.20

- Note1: The starting salary standards for all positions are the same for men and women. The salary difference between all levels is related to personal working experience. If only the basic salary and remuneration of individuals with the same rank and the same working experience are considered, there is no difference in the standard due to gender.
- Note2: Remuneration includes basic salary, allowance, bonus, benefits, overtime pay, compensatory leaves, and any other allowance. The statistical scope excludes the salary of temporary manpower.
- Note3: Managerial role: supervisors with ranks above foreman.
- Note4: Non-managerial role: Engineering - personnel who are engineers; Technical - on-site operation technicians; Others - personnel such as financial, accounting, legal, auditing, human resources, administrative and clerical personnel.
- Note5: Due to safety concerns, female personnel does not do shift work, hence they do not receive the relevant allowance for night duty.
- Note6: Employees on service from January 1, 2021 to December 31, 2021 were included in the calculation of monthly base salary ratio and annual remuneration ratio.



Human Rights Protection and Benefits

GRI 401-2~3, 402-1, 406-1, 408-1; SASB IF-WM-310a.2

ECOVE stipulated in the Employee Code of Conduct that no form of discrimination shall be made based on gender, race, religious belief, political inclinations, sexual orientation, occupational ranks, nationality, and age. Employees shall collectively maintain a healthy and safe working environment, and no forms of sexual harassment or acts of violence or threat will be tolerated. In 2021, ECOVE employed ten persons with physical or mental disabilities. This is reflective of how ECOVE does not limit ourselves to laws and regulations and is resolute in creating a fair and friendly employment environment.

With respect to sexual harassment, ECOVE has established a Sexual Harassment Grievance Handling Committee and set up a complaint hotline at (02)2162-1688#56112 and dedicated email (HR@ecove.com) to receive complaints. If there are occurrence or suspected occurrence of sexual harassment incidents, the committee shall activate an investigation procedure to conduct investigations on the basis of the principle of confidentiality and non-disclosure. Investigation reports shall be submitted within three months. If found to be true, punishments will be meted based on the seriousness of the incidents. There are three committee members in the Sexual Harassment Complaint Handling Committee. The department head of Management Division serves as the commissioner while other members are selected from among employees by the head of each department in consultation with the highest supervisor of the Management Division. The ratio of female members shall not be less than half.

ECOVE endeavors to protect employees' freedom of association and does not employ child labor. With the philosophy of caring for employees and co-sharing of profits, we provide excellent working environment and unimpeded channels of communications. In 2021, there were no incidents of sexual harassment grievances nor unlawful discrimination acts. Moreover, there were no workers strikes or suspensions of employment due to labor disputes or labor incidents.

Communication Channels

In an effort to fully communicate with employees, ECOVE established an "Employee Opinion Platform," increasing the channels for employees to provide feedback. It is divided into five categories namely, facility management, employee mailbox, proposal for improvement, sexual harassment complaint, and whistleblowing on violations against the Ethical Code of Conduct. All complaints are handled in confidentiality to protect the rights and interests of the whistleblowers. In 2021, no complaint was lodged.

Furthermore, In Accordance With Regulations, Ecove Has Also Nominated Employer And Employee Representatives With A Representation Ratio Of 50% On Each Side. In Order To Promote Communications And Harmony Between The Company And The Employees, Labor Relations Meetings Are Convened On A Quarterly Basis To Discuss Matters On Labor Conditions, Benefits, And Productivity. A senior executive forum is also held annually to invite personnel to have a meal with the Chairman and the President, enabling personnel to have face-to-face communication channels to improve and solve problems in a timely manner. Personnel can also share their views in normal time via internal grievance email HR@ecove.com. In 2021, with full communications between management and labor, there were no violations of labor laws and regulations due to labor disputes.

ECOVE has also kept up with the times and has enabled the communication of information to go fully digital by integrating with the Group's mobile app, my CTCI, it integrates human resources, education and training, and instant message announcement into one location so that employees can get hold of the latest information, and there will be no gap in communication. During the pandemic, my CTCI also proved to be a great asset in facilitating remote working.





Employee Caring

ECOVE continues to invest resources and spares no effort in terms of caring for employees. In addition to employees' group insurance that covers life Insurance, medical insurance, and accident insurance, we offered vaccine insurance and epidemic prevention insurance amid the COVID-19 pandemic in 2021; more than 80% of our employees also chose to enroll their dependents in group insurance. ECOVE also gives out childbirth funds and consolation funds for critical illnesses, disasters, and deaths among other benefits. By offering various benefits, we hope to offer full protection to both employees and their family members so that employees can work at ease knowing that their family members are taken good care of.

For employees on overseas assignments (in China or Macao), the Company provides round-trip tickets and leave for them to return to Taiwan to visit their families. Employees on overseas assignments also receive subsistence allowance to subsidize their overseas expenses. Due to the COVID-19 pandemic, all employees on overseas assignments were provided with quarantine hotel subsidies, nucleic acid amplification test fees, business travel insurance, and epidemic prevention kits in 2021; this led to passionate employees who were committed to their work, thereby motivating the entire business towards continuous growth.

On top of establishing regulations for "unpaid parental leave" and "unpaid medical leave" as per laws and regulations such as the Act of Gender Equality in Employment, etc., ECOVE also offers "disease prevention childcare leave." In 2021, we approved 11 applications for "disease prevention childcare leave" to enable employees to take care of their family members without any worries, assiduously providing a workplace which is balanced for work and family. In 2021, a total of seven individuals applied for "unpaid parental leave", four of whom have completed the leave and returned to their positions.

● Data on unpaid parental leave

	2019			2020			2021		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Number of applicants	2	0	2	2	5	7	2	5	7
Number of employees eligible to apply for unpaid parental leave in the current year	8	1	9	26	9	35	12	16	28
Number of employees who applied for reinstatement in the current year	0	0	0	2	3	5	1	3	4
Number of employees who were supposed to be reinstated in the current year	0	0	0	2	4	6	1	3	4
Number of employees who have worked continuously for one year after reinstatement	0	1	1	0	0	0	1	1	2
Number of employees reinstated in the previous year	1	1	2	0	0	0	2	3	5
Application rate (%)	25	0	22	8	55	20	16	31.25	25
Reinstatement rate (%)	-	-	-	100	75	83	100	100	100
Retention rate (%)	0	100	50	-	-	-	50	33	40

Note : The number of eligible applicants in the year is counted as the number of individuals eligible for parental leave, and taking into consideration the privacy of employees, information that cannot be actively obtained, such as "whether the spouse is employed", are omitted during the calculation.



Employee Satisfaction Survey

6 sessions

Senior executive forum

ECOVE conducts an employee engagement survey once every two years in an anonymous manner, hoping to better understand the real needs of employees and their willingness to stay. The 2021 employee engagement survey targeted employees who arrived before April 5, 2021 and remained on service during the period of the survey. The response rate was 98%, a 5% increase from the previous survey; the employee satisfaction level was 80%, down 1% from the previous survey. We sought to understand the reasons behind low scores on talent attraction and retention and crafted action plans (e.g., designing a key talent retention system, facilitating communication between labor and management, and organizing staff symposiums) to resolve the problems as well as raise the employee engagement. Each plan was implemented according to the schedule, and the improvement was reviewed to raise employees' engagement level.

In 2021, two sessions of senior executive forum were held in northern, central, and southern Taiwan, inviting the Chairman and employees to have a meal together and enabling personnel to share their thoughts and views while senior executives got to listen to the suggestions and feedback from employees. A total of five feedback cases were compiled. A 100% processing and response rate was achieved.



Welfare Pluralism

In accordance with laws and regulations, ECOVE has established the "Labor Pension Reserve Supervisory Committee" and also set up a designated account in a financial institution appointed by the government. After actuarial accounting, the pension funds under the older scheme comply with government laws and the full amount has been appropriated accordingly. The appropriation rate of the new scheme is 6%, in which 6% of the workers' salaries will be appropriated to the individual pension account at the Ministry of Labor. This is applicable to all employees who meet the criteria for the new scheme.

ECOVE established an Employee Stock Ownership Trust (ESOT) Charter with an eye to attract and retain talents while motivating employees and boosting the cohesiveness of employees to co-create benefits for the Company and shareholders. Employees can withdraw 5% - 15% of their salary each month as a deposit and the Company will provide a 50% rebate of the withdrawal amount as a form of reward to encourage employees to make long-term investments. Employees are therefore incentivized to hold stocks of the parent company on a long-term basis to reap business achievements. In 2021, there are a total of 461 participants, accounting for 56% of employees who were eligible for ESOT.

In an effort to encourage employees to undergo regular health checkups, ECOVE reviews the health checkup items offered by contractual hospitals once every two years and provides free health check for employees. We continue to care for employees and promote health management, as well as provide a safe, healthy, and friendly work environment. Apart from basic employee health insurance, group insurance, health checkups, and shareholding trusts, the Company provides full life insurance and accident insurance coverage for all employees from their first day on their job. In addition, employees and their families are offered alternatives and subsidies, enabling them to feel that the Company is offering additional financial protection for their families.

ECOVE and its subsidiaries have established the Employee Welfare Committee for many years. In 2020, a Joint CTCL Employee Welfare Committee was formed with the Group's affiliated companies. The joint welfare committee is composed of representatives elected by employees and management representatives to better plan and service for the benefits of the Group's personnel. The committee organizes periodic trips, family day, club activities, sports day, year-end parties, etc. To boot, birthday gifts, seasonal holiday gifts, and various subsidies are offered so that personnel can focus on their work without worries.

The COVID-19 pandemic continued to rage in 2021. To prevent the spread of infection through gatherings, various group activities were canceled in 2021, after much careful deliberation. The budget allocated for these activities was redirected back to personnel in the form of gifts or vouchers. Moreover, the welfare platform has officially been launched to make it more convenient for personnel to find out about the operational information of the committee and related regulatory measures. Moving forward, applications for welfare subsidies and registration for activities can be filed electronically and information can be disseminated in a more transparent and efficient manner to personnel. At the same time, with the aim of enhancing the convenience, flexibility, and multi-dimensional use of welfare funds, the welfare committee has collaborated with online platforms so that in future, welfare points, instead of vouchers, are allocated to employees to use for travel, shopping, various gift vouchers redemption on the platform at their discretion.

Talent Cultivation and Development

GRI 404-1

Educational Training and Industry-University Collaboration

Due to the unique and professional nature of the business, ECOVE has formulated the "Employee Continuing Studies Management Procedures" for training and cultivating of professional competence of employees, and annual training plans and subsequent follow-up reviews of results are carried out accordingly. At the same time, with the aim of improving competitiveness and internationalization, ECOVE encourages employees to obtain certificates in English, Japanese, German, and Arabic language. On top of providing subsidies, employees are also offered online learning resources, books available for borrowing, and discounts for supplementary courses.



Excellence award of ECOVE Environment Corp.'s paper focusing on talent diversified development presented at symposium.





In view of the lack of academic programs and resources in the field of incineration domestically, ECOVE has established a series of training courses in conjunction with related companies in relevant fields. In recent years, ECOVE has progressively signed memoranda of understanding (MOUs) on industry-university collaboration for long-term partnership in consultancy, technical exchange, internship, and on-the-job training among other fields, with Tamkang University, Chia Nan University of Pharmacy and Science, Feng Chia University, Fooyin University, Tajen University, National Kaohsiung University of Science and Technology, National Kaohsiung Marine University, and National Yunlin University of Science and Technology.

In 2021, internship programs were continuously rolled out in collaboration with Ming Chi University of Technology, National Chin-Yi University of Technology, Feng Chia University, Chia Nan University of Pharmacy and Science, Tamkang University, National Central University, and Chaoyang University of Technology with the aim of nurturing young talents and cultivating high-quality human resources. Since the implementation of the program, one intern was placed at the Linkou Water Resources Center for credit-bearing internships. Such effective use of resources of both parties also forged collaborative relationships between the industry and academic institutions.

In 2020, the existing GTS online training system, knowledge base system, business units under CTCI Group, and external resources were merged into a brand-new holistic training management system, CTCI University. The fields of knowledge were expanded to six collages, namely, the College of Quality and HSE, the College of Engineering and Design, the College of Project Integration, the College of Business Management, the College of Leadership, and the College of Co-Education. This is akin to the university system to assist personnel to tailor their own training courses according to their jobs and developments. Knowledge and experience are recorded as online courses or learning resources, shared mainly through the digital platform combined with the original knowledge base system and external resources (e.g., MOOC, TED, and YouTube). All local and overseas-based personnel in the Group can access the platform, unrestricted by geographical constraints, to watch and review the courses at any anytime, anywhere, and for an unlimited number of times, hence achieving the goal of company-wide training and synchronized learning.



CTCI University online platform

Mobile phone (mobile device) learning platform

24,988 hours

In 2021, the total hours of various training courses for employees, including online, in-person, and external training, were approximately 24,988 hours

3.5 million

covering professional knowledge training, such as incinerator operation and maintenance, safety and health training, self-guided health training, general education, and management training, etc. The total training cost for the year was about NT\$3.5 million.

● Statistics on course hours on GTS

Year		2019			2020			2021			
Level	Gender	employees	Total training hours	Average training hours perperson	employees	Total training hours	Average training hours perperson	employees	Total training hours	Average training hours perperson	
Managerial	Female	19	558	29	15	642	42.7	12	281	23.5	
	Male	163	4,547	28	79	5,112	64.7	149	5,794	38.9	
Engineering	Female	16	451	28	1573	74.9	75	25	741	29.6	
	Male	107	1,982	19	7,365	59.4	59	131	4,334	33.1	
Non-managerial	Technical	Female	27	357	13	1,026	32.1	32	43	1,089	25.3
		Male	383	8,550	22	30,321	67.4	67	430	10,400	24.2
Others	Female	87	1,150	13	2,774	33.0	32	92	2,132	23.2	
	Male	13	74	6	224	24.8	25	9	218	24.2	
Total	Female	149	2,515	17	154	6,015	39.5	172	4,243	24.7	
	Male	666	15,152	23	667	43,022	64.9	719	20,745	28.9	

Note : "Number of employees" refers to the number of employees on service as of December 31, 2021.

ECOVE actively invests resources in cultivating talent with the aim of attracting like-minded professionals. Holistic education and training are mapped out to train new talents while providing professional training for different job categories. On top of tailoring individual development plan (IDP) for each employee, resources are also continuously invested in the cultivation of the management abilities, the mentorship system, and CTCL University. We comprehensive plan the resources and diversified development possibilities of personnel at each stage of their career so that personnel can continue to learn and grow and develop a stronger sense of identity with ECOVE's corporate culture and heritage.

With regard to formulating the IDP for personnel primed for key roles, personnel are able to understand their own strengths and weaknesses through communication with workplace mentors, on top of being encouraged to hone their knowledge, skills, and attitude. A diversified development approach is adopted to elevate their competitiveness, which in turn would effectuate a win-win result in elevating the competitiveness of personnel and the Company and fostering a work environment of limitless career progression and boundless opportunities for growth. Along with that, we use the elite talent training mechanism to properly lay out the division of labor for each business area and customize the mobility plans for personnel, essentially carrying out the succession training plan to cope with the potential risks in time to come.





Total Participation ESG

ECOVE combined corporate culture with sustainability issues to plan and execute a series of internalization activities, so that personnel gains awareness and appreciate CSR, and in turn, embrace CSR in the daily work to achieve total participation ESG.



"ESG Hour" is sent to all employees every Friday to constantly provide employees with knowledge of CSR and ESG.

ECOVE continues to build consensus among employees to shape a sustainable culture. Through team readings, announcements, and group sharing, we ensure that employees receive messages and realize the sustainable culture in their daily lives. Through activities, we allow personnel to know and pay attention to ESG and work as a team to improve team cohesion.



Each operating site shares ESG Hour through announcements, LINE groups, and morning meetings.

ECOVE rolled out monthly occupational safety reading activities, where personnel were reminded through easy-to-understand fables to walk the talk. Through education and training, the importance of workplace safety and early prevention were instilled into employees, urging employees to take responsibility for keeping the workplace safe.

乳酪理論，知行合一



一樣豔陽高照的尋常日子，市區一座美輪美奐的大型休閒購物中心正在進行修整，內部附設的 3D 電影院，要換上最尖端最科技的.....

共讀「乳酪理論」

及時挽救，知行合一



從前，有人養了一群羊。一天早上，他發現少了一隻羊，仔細一看，原來羊圈破了個洞，晚上狼鑽進來，叼走了一隻羊，鄰居勸他說：「你今天趕緊把羊圈修一修.....」

共讀「亡羊補牢」

未雨綢繆，知行合一



古時候有一種猴子，叫做獠(ㄌㄠˊ)，這種猴子體型小巧，爪子非常尖利、靈活。老虎頭上發癢自己搨不著，就叫獠替他抓癢，獠伸出尖銳的爪子.....

共讀「搨搔虎養」

安全承諾，知行合一



員外友人到莊園作客，看見莊園的爐灶煙囪比直，旁邊還放著一堆柴草，友人好意地提醒員外：「你最好把煙囪改成彎的，把柴草搬遠一些，不然.....」

共讀「曲突徙薪」

An ESG Hour email about monthly occupational safety reading is sent to every week to remind employees to walk the talk.

The CTCI Group President's vision of ESG was made into CSR Moment and shared through ESG Hour to impart knowledge of ESG to all employees.



Employees read the CTCI Group President's vision of CSR through morning meetings and LINE groups to create a common language for sustainability.



Serving as initiative ambassadors, presidents across the group led the staff to pay attention to environmental issues in their daily lives and take epidemic prevention measures, fulfilling the responsibility of a corporate citizen.



Senior executives led employees to respond to international initiatives and take epidemic prevention measures together.

In January 2021, each operating site made a commitment on carbon reduction by setting up ESG dashboards (waste disposal, renewable energy, waste solvent disposal, wastewater treatment, quarantine fumigation, waste removal, rectification, and electromechanical services), calling on all employees to reduce carbon emissions on their own initiative.



All employees pledged to proactively reduce carbon emissions and achieve net zero emissions.



Safe and Healthy Workplace

GRI 403-1+10, 419-1 ; SASB IF-WM-320a.1 ; IF-WM-320a.2

Policies and Committees

ECOVE has established the HSE policy which is based on the premise of environmental protection and a safe and healthy work environment, while protecting the physical and mental health of employees and subcontractors, so as to ensure a safe and worry-free working environment.



Upholding safety first

Provide a safe and secure workplace and promote a safety culture in the Company's operations and project execution with a view to achieving the goal of zero occupational casualties.



Promotion of employee health and welfare

Actively promote the self-management of occupational health, strengthen the protection and care of physical and mental health, create a healthy working environment, and promote physical and mental wellbeing.



Continuous improvement of the HSE system

Continuously review and optimize HSE activities, strive to improve occupational health and working environment, ensure that the HSE management system is robust and feasible, and enhance the applicability, appropriateness, and effectiveness of the HSE management system.



Implement risk management systems

Identify the potential hazards of HSE activities, assess and deal with risks, prevent occupational injuries and diseases and environmental pollution, and continue to improve our overall performance in HSE.



Fulfill regulatory and contractual requirements

Identify laws, regulations, and contracts, supervise and implement the roll out of HSE plan, ensure the operation process of the Company and projects meet HSE requirements and fulfill the compliance obligations.



Promoting company-wide employee participation and training

Encourage participation in HSE training, reinforce the awareness and capabilities for HSE, provide subcontractors and employees with HSE consultation, smooth communication and feedback channels.

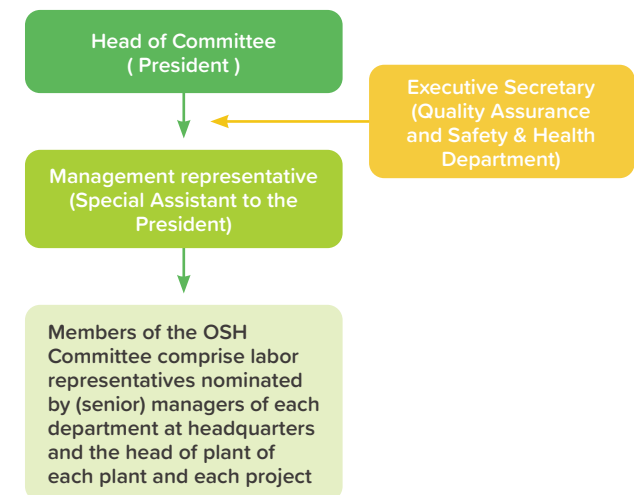


Environmental protection and sustainable development

Provide professional services that meet environmental protection requirements, promote energy conservation, carbon reduction, pollution prevention and resource cycling, and collaborate with stakeholders to promote physical and mental wellbeing.

With respect to the Occupational Safety and Health Committees (OSH Committee) of ECOVE and its subsidiaries, ECOVE Environment Service Corp. and ECOVE Waste Management Corp. have met the predetermined standards for the number of employees and have set up the respective OSH Committees. ECOVE Solar Energy Corporation has set up the OSH Committee in line with the spirit of ISO 45001, although its scale has not met the predetermined standards. As the scales of ECOVE Environment Corp., ECOVE Wujih Energy Corp., and ECOVE Miaoli Energy Corp. have not met the predetermined standards, OSH Committees were not set up. At ECOVE Environment Service Corp., ECOVE Waste Management Corp., and ECOVE Solar Energy Corporation, the OSH Committee convenes on a quarterly basis. At Environment Service Corp., there are 36 members, including 13 labor representatives, accounting for 36% of all members, and the President serves as the chairman of the committee. The conclusions from the meetings are announced on ECOVE Environment Service Corp.'s intranet to ensure information is disseminated and to track the performance of improvement works. (Note: At ECOVE Waste Management Corp., there are 10 members, including 4 labor representatives, accounting for 40% of all members. At ECOVE Solar Energy Corporation, there are 8 members, including 3 labor representatives, accounting for 38% of all members.)

Organizational chart of OSH Committee at ECOVE Environment Service Corp.



● Organizational chart of OSH Committee at ECOVE Waste Management Corp.



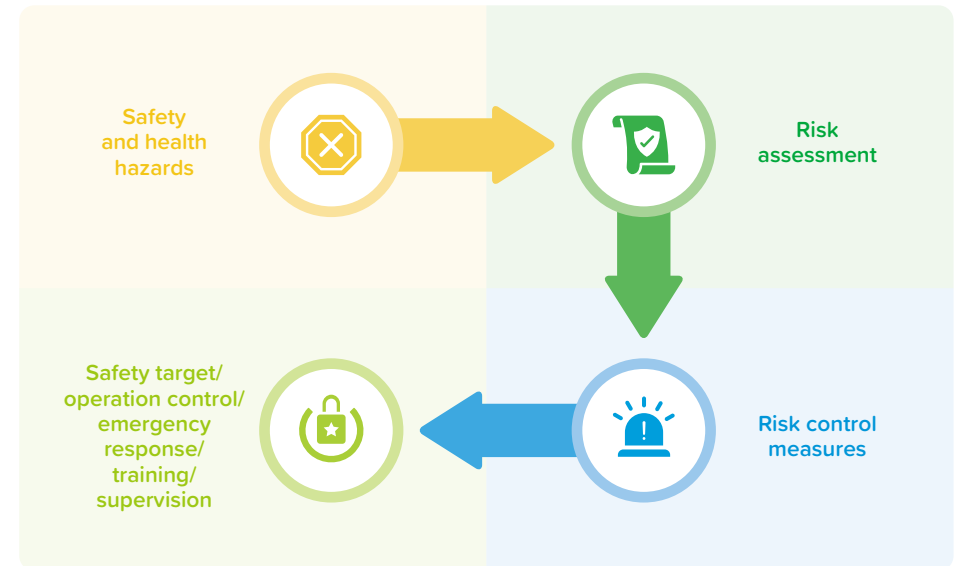
● Seven Major KPIs for HSE



Risk Evaluation and Operations Safety Control

In terms of risk control on occupational safety and health, ECOVE Environment Service Corp. conducts risk evaluation on every work process, chemical substance, tools, and environmental exposure through the occupational safety and health management system, and separately establishes processing standards and regulations based on their levels of risk. At the same time, ECOVE Environment Service Corp. also reviews the reasonableness of processing standards through onsite inspection to meet the appropriateness of processing standards.

● Risk assessment process flow



Post management system assessment, operations safety control regulations for more dangerous and hazardous tasks such as hot work, work at height, rotating equipment, lifting, maintenance of electrical equipment, fault isolation for equipment, etc. are stipulated and work would be assigned daily through the Maintenance Management Information System (MMIS). Job Safety Analysis (JSA) will also be carried out during morning briefings for hazard advocacy. With an eye toward achieving the goal of zero disasters, work can only commence after workers have filed applications for work to be done based on the risk level of the task nature and operation safety control regulations, operations, maintenance, and HSE personnel have jointly confirmed the break in electricity, isolation, locking, and tagging individually to ascertain there is no danger.



Equipment isolation tag



Joint confirmation by operation, maintenance, and HSE personnel

Mechanical Equipment Management, Key Inspection, and Job Checks

At ECOVE Environment Service Corp., as for machinery and equipment management, the regular inspections of machinery or equipment at each incineration plant are scheduled through the MMIS system, and maintenance planning and repair tracking are conducted by digitized systems to prevent oversight. Additionally, automated inspection plans (including vehicle maintenance, etc.) are set prior to operations to implement pre-work inspections, on-site monitoring, and inspection during operations, as well as incorporating assessments and reviews and on-site sign-ops upon completion of works. With the adoption of various safety control processes and the use of digitized license and permit query to effectively ascertain the validity of permits and the qualification of operators, the safety during the operation period is ascertained.

ECOVE Environment Service Corp. evaluates the safety and health regulations and hazardous factors related to the said work and duly incorporates these into the work brief. Contractor safety and health education and training are conducted every year to fortify the contractors' awareness of safety and health. In accordance with the HSE policies and contract content, compliance with relevant OSH provisions shall be included (such as rights to withdraw laborers as per Article 18 Occupational Safety and Health Act). The training teaches workers how to protect themselves in unsafe or unhealthy situations.

Prior to commencement of the operation, hazard notifications and protocol meetings are carried out by ECOVE Environment Service Corp. to reinforce the awareness and understanding of safety and health when working in the plants. Moreover, all incoming machinery and equipment are individually inspected to ensure safe usage. During the construction period, toolbox meetings will be conducted on a daily basis while audits conducted from time to time. Immediate rectification will be required whenever deficiencies are found, and review meetings will be held when necessary. Upon completion of works, an evaluation will be carried out for the performance of seven OSH KPIs during the construction period. In the event that evaluation results (which are divided into five levels) fall short of requirements, the contractor will be blacklisted as an unqualified supplier.

With regard to access control, besides utilizing facial and fingerprint identification systems for access control at each plant, qualification reviews for the construction personnel

are also carried out. After permission has been granted, personal traits will be scanned into the identification system to reinforce access control for qualified personnel, and contractors will be included in the access control management. During the construction period, on top of the above-mentioned audits and informative training, the Company will also run blood pressure or sobriety tests on the personnel from time to time. Should abnormalities be found, the work of the said personnel on that day will be stopped, so as to avoid any hazard of physical discomfort caused by constrained, working at heights or high temperature environment. Personnel is also constantly reminded to pay attention to the management of their own physical health and discipline.

Regarding vehicle safety, safe driving, and hazardous substances, safety advocacy will be carried out during morning briefings through JSA. The personnel's health and fit to work will be assessed prior to the commencement of operations. If there are any unwell personnel, this shall be raised immediately and the person in charge shall make work adjustments immediately. Alcoholic beverages are strictly prohibited on-site and sobriety tests will be conducted as needed, and vehicle maintenance is managed according to the MMIS system. In 2021, no traffic accident took place, but ECOVE Waste Management Corp. got two tickets for traffic violations.

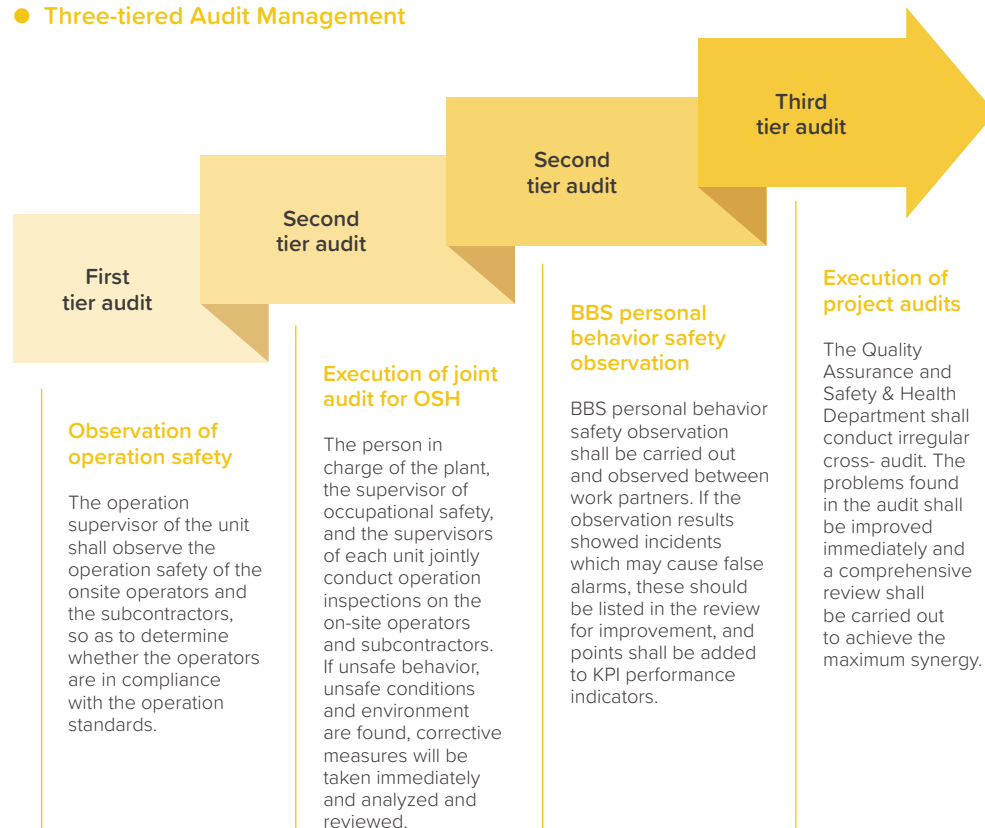


Installation of facial and fingerprint identification systems to facilitate the control of contractors' entry qualification

Reinforced Safety Management and Audit

To strengthen safety management, ECOVE gradually and continuously improves to achieve enhanced safety management through the auditing system. At the same time, employees' safety knowledge and competencies are also verified and confirmed via audit. Weaknesses are understood and incorporated into the training system and as a reference for amendments to the work standards. ECOVE Environment Service Corp. actively promoted a three-tiered audit management system whereby on-site engineers shall carry out the level 1 management of safety and health, OSH personnel and plant managers shall conduct the level 2 of safety and health audits (including the independent evaluation of each plant), and the Company conducts level 3 safety and health supervisory audits. Safety management and audit systems are realized through the merging of the audit system with assessments. With regard to the third tier audit, the number of sessions and deficiencies found in the audit are reported in the committee meetings. Departments in charge shall be responsible for the improvement of incineration plants and projects they manage. Such improvements shall then be reviewed and confirmed by ECOVE Environment Service Corp.

● Three-tiered Audit Management



The Quality Assurance and Safety & Health Department shall request its subordinate units to conduct root cause analysis for audit deficiencies and find out corresponding improvement measures. Upon confirmation, the improvement measures shall be executed and relevant departments (Factory Affairs or Project Department I or II) and the Quality Assurance and Safety & Health Department will be notified once the issues have been rectified. The improvement results will be explained in a senior management meeting and the case will be closed. Audit not only includes internal head office inspection or project cross audit, but also regular or irregular audits conducted by local external competent authorities in accordance with the annual inspection policy. Post audit, the local project will be informed of the inspection results immediately, and the local project shall be requested to cooperate in the implementation of safety management.



ISO 45001 system documentation verification.



Fire brigade supervised the inspection and the inspection results met regulatory requirements.



The EPB conducted an audit of operations safety and quality from time to time.



Central Taiwan Inspection Office and Occupational Safety and Health Center came on-site to conduct inspections, and the inspection results met regulatory requirements.



Occupational Disaster Prevention

ECOVE has always placed heavy emphasis on the safety and health in the workplace, and dedicated resources in providing a safer work environment for employees. All employees are deeply aware that safety is closely related to their well-being. We are dedicated to its implementation and sees zero-disaster as the utmost priority of our operations. We create a safe and healthy work environment through the roll out of various plans and systems while upholding the core value of being people-oriented, pumping in manpower and resources into maintaining the safety and health of employees at work. With the philosophy of sustainable management, we launched full-fledged efforts at achieving zero accidents.

For ECOVE, there is nothing more important than providing a safe and secure working environment for our personnel. Therefore, we have committed resources in the building of friendly, healthy, and safe workplaces. At ECOVE, "safety first" is neither a slogan we merely pay lip service to nor is it a routine matter. It is fully internalized as the daily work practices of all personnel. With respect to safety issues, on top of repeated reminders not to let up on safety with exhortations to supervisors and personnel on various occasions, we also reinforced the awareness on safety among personnel through bite-sized stories instead of provisions-based training.

<p>安全承諾，知行合一</p> <p>員外友人到莊園作客，看見莊園的爐灶煙囪比直，旁邊還放著一堆柴草，友人好意地提醒員外：「你最好把煙囪改成彎的，把柴草搬遠一些，不然.....」</p> <p>5/8 共讀 「曲突徙薪」</p>	<p>未雨綢繆，知行合一</p> <p>古時候有一種猴子，叫做獠(子么)，這種猴子體型小巧，爪子非常尖利、靈活。老虎頭上發癢自己搨不著，就叫獠替他抓癢，獠伸出尖銳的爪子.....</p> <p>5/15 共讀 「獠搔虎養」</p>	<p>及時挽救，知行合一</p> <p>從前，有人養了一群羊。一天早上，他發現少了一隻羊，仔細一看，原來羊圈破了個洞，晚上狼鑽進來，叼走了一隻羊，鄰居勸他說：「你今天趕緊把羊圈修一修.....」</p> <p>5/22 共讀 「亡羊補牢」</p>	<p>乳酪理論，知行合一</p> <p>一樣豔陽高照的尋常日子，市區一座美輪美奐的大型休閒購物中心正在進行修整，內部附設的3D電影院，要換上最尖端最科技的.....</p> <p>5/29 共讀 「乳酪理論」</p>
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Personnel are reminded through fables that safety as the utmost priority and to walk the talk.

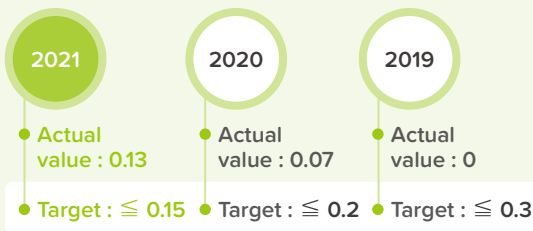
Education and training courses and drills in 2021

	Number of sessions	Total number of participants	Coverage rate*(%)
General safety and health education training	11	294	100%
Special operational hazard education and training (hot work, confined space controls, work at height controls, rotating equipment isolation, etc.)	16	454	100%
Contractor safety and health training	7	262	100%
Emergency response education and training or drills, etc. (earthquakes, typhoons, fire disasters, etc.)	4	102	100%
Other education and training (road safety, equipment operation safety training, protection gear, regulatory requirements, pointing and calling, etc.)	41	962	100%

Note : Coverage rate = (Actual number of persons trained/Number of persons to be trained) * 100%

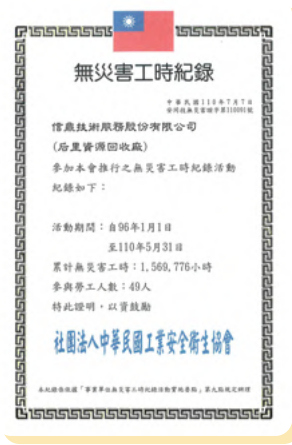
Definition | Based on Occupational Safety and Health Administration, USA

Classification | Total Recordable Case Rate (TRCR)



Description:

- In 2021, there were 26 inspections conducted by inspection units in respective jurisdictions, one penalty, and one incident causing work-related disability.
- TRCR : OSHA can record the total number of incidents *200,000/ the total accumulated work hours in a year; OSHA can record the total number of incidents as the total number of deaths, disabilities, restrictions, or job changes and medical treatment.
- The figures on this table cover Taiwan region and all subsidiaries and investment companies in Macao and Zhejiang.



Houli Plant

● Statistics on work-related injuries

ECOVE Environment Service Corp.	Item	2017	2018	2019	2020	2021	Calculation method
	Disabling injury frequency rate	0.00	0.10	0	0	0.10	Number of disabling injuries x 200,000/total number of working hours.
	Occupational disease rate	0	0	0	0	0	Number of occupational disease incidence x 200,000/total number of working hours.
	Disabling injury severity rate	1	0.79	0	0	16.90	Total number of workdays lost x 200,000/total number of working hours.
	Number of deaths	0	0	0	0	0	-
	Number of false alarms	0	0	0	0	0	-
	Note : In 2021, the disabling injury frequency rate, disabling injury severity rate, and death count for contractors and subcontractors were all 0.						

ECOVE	Item	2017	2018	2019	2020	2021	Calculation method
	Disabling injury frequency rate	0	0	0	0	0.07	Number of disabling injuries x 200,000/total number of working hours.
	Occupational disease rate	0	0	0	0	0	Number of occupational disease incidence x 200,000/total number of working hours.
	Disabling injury severity rate	0	0	0	0	11.0	Total number of workdays lost x 200,000/total number of working hours.
	Number of deaths	0	0	0	0	0	-
	Number of false alarms	0	0	0	0	0	-
Note 1 : In 2021, no occupational disasters occurred at both ECOVE Solar Energy Corporation and ECOVE Solvent Recycling Corp. Note 2 : In 2021, the disabling injury frequency rate, disabling injury severity rate, and death count for contractors and subcontractors were all 0.							

● Type of occupational injury at ECOVE

Injury type	2017	2018	2019	2020	2021
Slips, trips and falls	1	0	0	0	0
Caught in or crushed by machine	0	1	0	1	1
Falling objects	0	0	0	0	0
Cuts and lacerations	0	0	0	0	0
Burns	0	0	0	0	1 (disability)
Being hit	0	0	0	0	0
Electrocution	0	0	0	0	0
Falls from heights	1	0	0	0	0
Musculoskeletal injuries	0	2	0	0	1
Commuting accident	5	0	3	8	4
Total	7	3	3	9	7

Note 1: In 2021, all seven persons involved were male.
 Note 2: In 2021, the number of contractors and subcontractors in each injury category was 0.
 Note 3: In the future, we will use alternative tools to avoid direct contact with machines, preventing employees from being caught in or crushed by machines.
 Note 4: For commuting accidents, we communicated road safety to employees every Wednesday using the defensive driving manual published by the Ministry of Transportation and Communication and videos of traffic accidents. We also drew a traffic route map to remind employees of accident-prone road sections.

Obtaining ISO 45001 Certification

ECOVE upholds the spirit of safety and health and environment as the utmost priorities and complies with the seven major HSE policies. Since 2009, the nine incineration plants operated and managed by ECOVE and its subsidiary, ECOVE Environment Service Corp., have obtained the OHSAS 18001 and TOSHMS certifications. In 2011, in response to policies by the Ministry of Labor, a full conversion of TOSHMS to CNS 15506 was carried out, and during the period the Company continues to pass verifications. In 2018, all eight operating sites passed the ISO 45001 verification. The verification rate was 100% for each operating site and included all workers at the workplace, including employees, contractors, and subcontractors. In 2019, ECOVE Environment Service Corp., including all sites of the head office, successfully completed the verification, and verification was valid for 2021. In 2021, ECOVE Waste Management Corp. and G.D. Development Corporation also got certified to ISO 45001.



ECOVE Environment Service Corp's ISO 45001 certification.

Note : The nine operating sites are the Head Office, Keelung, Southern Taoyuan, Miaoli, Houli, Wurih, Xizhou, Tainan, and the Tainan Science Park.



Awards

With the aim of driving the cultivation of a culture of safety and health and strengthening the self-management of safety and health, ECOVE Environment Service Corp. encouraged all units to participate in external safety and health evaluations. We have repeatedly achieved excellent results, demonstrating the effectiveness of our safety and health promotion. With our stellar performance, we have clinched numerous national safety and health awards since 2008, and was further recognized for the highest honor of Industry Benchmark Award at National Occupational Safety Awards by the Ministry of Labor in 2016 (subsequently not allowed to participate in the safety-related evaluations by Ministry of Labor for next five years). We did not rest on our laurels and pressed ahead in controlling safety. In 2021, Tainan Science Park Plant won the Excellent Industrial Safety Entity Award; Gangshan Plant was selected a leading company of the Occupational Safety and Health (OSH) Family; Tainan Plant received an Excellence Award in the OSH Family Evaluation.

2021 Occupational Safety and Health Outstanding Company Entity

- **Awarding association**
Southern Taiwan Science Park Bureau, MOST
- **Winner**
Tainan Science Park Plant





Leading Company of OSH Family

- **Awarding association**
Occupational Safety and Health Administration
- **Winner**
Gangshan Plant




Excellence Award in the 2021 OSH Family Evaluation

- **Awarding association**
Bureau of Labor Affairs, Tainan City Government
- **Winner**
Tainan Plant




Occupational Health Management

In consideration of employees' work environment and conditions, ECOVE has planned a comprehensive health management system and provides pre-placement health checkup and specific medical examinations for all new employees. These go above and beyond the minimum legal requirements as we are determined to take care of our employees. General health checkup is conducted once every two years while specific medical examinations are conducted annually while work environment monitoring is carried out regularly. Based on an employee's job requirements and possible hazard exposures, further monitoring and comparisons are carried out. Employees with possible hazard exposures, such as airborne dust, will undergo specific medical examinations so as to manage the environment and employees' health properly. The current execution status for health checkup is good and no related occupational diseases have been found during specific medical examinations.

In terms of services for occupational health, we assessed the more susceptible risk factors which personnel may be exposed to in the work environment and organized related education training courses, and provided consultation so as to enable personnel to have a better understanding on their work environment and take extra steps in protecting their own health to mitigate health impacts.

In 2019, ECOVE hired healthcare personnel to assist in developing the establishment of a more comprehensive health management plan and system platform. Physicians were also hired to provide on-site medical services. In 2021, the total number of on-site service hours was 57 hours, including 19 sessions in 11 plants and the headquarters, with on-site physicians and healthcare personnel jointly carrying out on-site hazard assessments, tracking of health anomalies, general health care consultation, tracking of chronic diseases and injuries. Moreover, related health promotion activities were carried out in conjunction with the anomalies trend found in annual health checkup and the pandemic situation.

There is a high correlation between anomalies in employee health checkup and metabolic syndrome. Hence, we strengthened health management for metabolic syndrome and CPR+AED training. We also organized various health management activities targeting anomalous issues (blood lipid, blood pressure, blood glucose) and imparted first aid knowledge and skills to employees. For example,

Health Management and Seminars

we conducted health talks on metabolic syndrome to enable employees to understand their personal health status. The topics covered personal and metabolic syndrome-related health check values and health education information on steering clear from metabolic syndrome. ECOVE has been promoting AED-certified sites. Currently, four of our 11 plants (i.e., Southern Taoyuan Plant, Miaoli Plant, Houli Plant, and Tainan Plant) are AED certified.

The health care system platform mainly includes relevant health knowledge, hospital appointments for health examinations, health questionnaires, health promotion activities, and registration for medical and health consultation, etc. Efforts were put into promoting the intelligent and systematic Hygeia health management system. Through data collection and analysis, we can effectively use the systems to collect employees' health information and report statistics for risk management. Adopting a multi-pronged approach for health management. Health management is divided into four levels. In 2021, personnel on levels 3 and 4 of health check anomalies accounted for 17.9% of all employees and they were the main tracking targets. Related health education and tracking of personnel who have health check anomalies were carried out and to determine if medical treatment and medication were required. It is the primary task of medical personnel to grasp the current physical condition of personnel. For employees not on levels 3 and 4 of health check anomalies, ECOVE took protective measures and organized regular examinations to keep them healthy and free from work-related diseases.

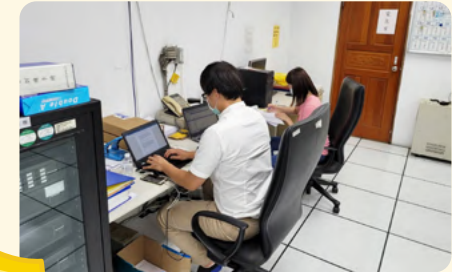
In 2021, we predominantly focused on the prevention of abnormal workload-inducing diseases, with a total of 107 personal health guidance provided for persons classified as middle- and high-risk, follow-up of 82 employees with health check anomalies, and 232 consultations with physicians. The completion rate was 100%. With regard to maternal health protection in the workplace, we settled three of our five female workers under maternal health protection in 2021. Ongoing support was given to the remaining two female workers.

In response to the COVID-19 pandemic, ECOVE set up an rapid response team, a platform, and an application (MyCTCI) to instantly monitor the employees' daily temperature, activities, and COVID-19 vaccine administration and home rapid testing results. We called on all employees, except for those under special physiological conditions, to vaccinate according to the government policy to enhance their defense against COVID-19. Only by increasing the vaccination rate and community immunity could we effectively fight the pandemic, and our top priority was to prevent the spread of the pandemic.

By the end of 2021, 96% of our employees (including non-Taiwanese employees overseas) received the first dose of the vaccine and 88% got the second dose of the vaccine. Since July 2021, 3,176 employees have been provided with home-based rapid testing reagents and all of them tested negative. For us, this is the best demonstration of teamwork and corporate social responsibility.



Review of health check reports by the stationed physician.



Review of on-site medical service records.



Health consultation.



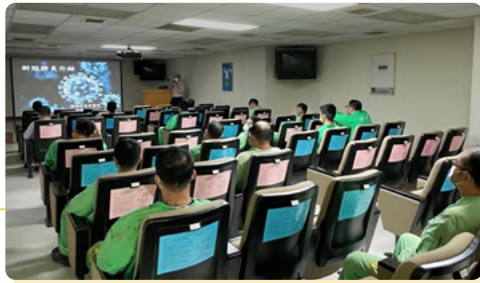
Follow-up of employees with health check anomalies by phone.

CPR+AED training





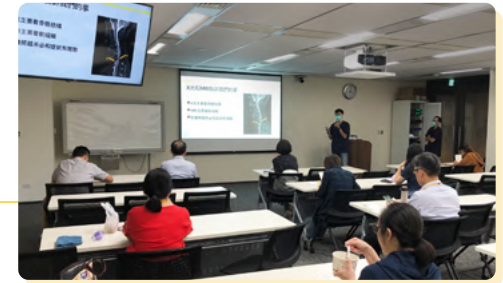
Introduction to COVID-19 and vaccines



Gatekeeper for suicide prevention



Shoulder and neck pain prevention



Introduction to COVID-19 and vaccines



Mindfulness-based stress reduction and basic exercise



Treatment and prevention of lower back pain



Workplace empowerment and stress relief



Medication safety, drug abuse and metabolic syndrome prevention



A farewell to metabolic syndrome



Healthy eating basics



Drug abuse



Sleep disorder



Occupational health services and health promotion activities

	Education and training item	Number of sessions	Total number of participants	Coverage rate (%) ^{Note}
2021 Occupational health services (using health training as example)	Prevention of heat exhaustion training	5	158	100%
	Ergonomic hazard prevention training	3	100	100%
	Abnormal workload training	3	51	100%
	Prevention of illegal harm during execution of duties	3	99	100%
2021 health promotion activities	AED and CPR training	6	137	100%
	Health education training ("Three highs", tobacco hazard prevention, dust, noise)	10	271	100%

Note 1 : Coverage rate = (Actual number of persons trained/Number of persons to be trained) x 100%.

Note 2 : Health training courses were scheduled according to risk identification/ job nature/job requirements to involve all employees; training courses were also monitored on-site on a regular basis to make necessary adjustments for members.

Dioxin tracking test

Employees are ECOVE's biggest assets. The Company not only creates a safe work environment, but also safeguards employees' health. Since 2008, it has delegated the Research Center of Environmental Trace Toxic Substances of National Cheng Kung University, to base on job nature, exposed environment and job tenure, carry out analysis and select more representative employees for dioxin testing and tracing. Blood test and tracing are carried out every 4 years, and it has since conducted 4 tests. Cross comparison is also carried out based on the evaluation questionnaire on employees' health, diet and occupational exposure. The test results showed that dioxin concentration in the blood samples of the personnel tested was lower than the general public and the dioxin concentration in blood recommended by the World Health Organization. This is because incineration plants operated and managed by ECOVE have complete and effective air pollution prevention measures. In addition, the Company has improved on the implementation of employees' health and safety protection education, and raised employees' safety and health awareness, increasing the correct usage rate of personal protective equipment. ECOVE's monitoring of dioxin in the blood of incineration plant employees is not only the first such practice in Taiwan but also one of a few cases in the world.

The Company adopts a serious attitude towards the danger of dioxin. As dioxin accumulation is mainly through intake of food, by reducing exposure to intake through food can significantly reduce dioxin accumulation. To prevent staffs from being exposed to environment with dioxin, regular annual maintenance occupational safety and health trainings are conducted before annual maintenance, where staffs are taught the correct way of putting on their personal protective equipment. During operation, occupational safety controls are implemented, and spot checks on wearing safety equipment and inspection by foreman/supervisors are conducted. If protective equipment is not put on and occupational safety control not implemented, the operation will be asked to stop immediately, and can only resume when the protective equipment is put on and safety control implemented. This is not only a safety requirement but also a commitment to the employees and family members. Leaving home happily and returning safely is no longer a slogan but an actual practice.



ECOVE is Taiwan's only company that monitors Dioxin in the blood of employees. The test results have been lower than the average of people in Taiwan (19.7 pg WHO-TEQ/g lipid).

Year employees were tested

Value

97

11.1 pg WHO-TEQ/g lipid

101

13.3 pg WHO-TEQ/g lipid

105

14.6 pg WHO-TEQ/g lipid

109

12.1 pg WHO-TEQ/g lipid

In 2020, polychlorinated dibenzodioxins/furans in the blood of 38 municipal waste incinerator operators averaged 12.1 pg WHO9 8 -TEQ/g lipid, which was lower than the average in 2016 (14.6 pg WHO9 8 -TEQ/g lipid) and that in 2012 (13.3 pg WHO9 8 -TEQ/g lipid) but slightly higher than the average in 2008 (11.1 pg WHO9 8 -TEQ/g lipid). This indicated that although these municipal waste incinerator operators have worked in the incinerator for a long time, the concentration of polychlorinated dibenzodioxins/furans in their blood has not increased significantly due to exposure to the work environment.



Personal data collection before the test.

Measurement of blood pressure.

Body fat check.



Diet and health questionnaire.

Blood test.

Pretreatment of separation of serum lipids.



ESG Moment

Since the launch of the Safety Moment activity in 2017, as long as there are more than five participants in a meeting, the Safety Moment activity must be carried out at the start of the meeting. In order to raise the benefits and coverage scope for Safety Moment, Safety Moment was refined as CSR Moment in 2019, expanding the dimensions to "sustainable development", "sustainable management", "sustainable HSE", and "sustainable product quality". Personnel are encouraged to propose or share related topics and improvement measures. The coverage scope was further expanded to contractors and stakeholders, internalizing CSR as the DNA of the enterprise. As of 2021, more than 130 CSR Moments have been shared, boosting the understanding and actions towards Environmental, Social, and Governance (ESG). In response to sustainable development trends and an increased awareness of ESG, CSR Moment will be renamed ESG Moment in 2022.

Safety Reflection Activities

Safety Reflection Activities was the main activity for the series of HSE activities in 2020. Through the on-site guidance and inspection of supervisors at all levels, as well as the education and training of high-risk operations by using video, we continuously carried out safety reflections and put forward innovation or improvement suggestions in 2021.



Visible Leadership



The various management personally chaired the HSE meetings.



On-site inspection.



HSE Training



Regular HSE training for on-site supervisors.



On-site high-risk hazards training for contractors.



General safety training for all employees.



Group-wide HSE online courses.



ESG Moment

ESG Moment **ECOVE Implements Circular Economy by Recycling and Reusing Waste Solvents**

ECOVE SRC recycles high-tech industries low-concentration waste isopropanol. By using purification process, SRC turns waste into high-concentration isopropanol, which can be used as industrial material to reduce the exploitation of raw materials. The technology has below advantages:

- Energy saving, small equipment footprint
- Low operating cost
- High recovery rate
- Multiple programs can be used in series to improve product purity

ECOVE

ECOVE Implements Circular Economy by Recycling and Reusing Waste Solvents.

ESG Moment **保護陸地生物，世界級景觀紫斑蝶大遷徙**

台灣紫斑蝶年遷徙，是全球僅有的世界級景觀。遷徙中最大的休息站就是竹南！

紫斑蝶與環境生態保育協會合作，攜手共創紫斑蝶友善環境，於國內外積極資源植物，透過護蝶隊與陸地生物，共創我們的綠色未來！

*Reference : <https://the.applety.com/headline/2105411078334009626789Nv8BTS5Q>

ECOVE

Environment - Protecting terrestrial organisms, the world-class landscape of the great migration of the purple crow butterflies.



Safety Emergency Response Drills



Emergency response drill for chemical spills.



Emergency response drill for confined space.



Introduction to COVID-19 vaccines.



Fire Drills.



Access control (e.g., wearing mask and measuring body temperature).



Social distancing in a morning meeting.



Environment and vehicle disinfection.



Video conferencing.



Occupational Safety and Health Management in the Post-pandemic Era and Future Outlook

ECOVE Environment Corp. is the largest environmental resource management company in Taiwan, with its business scope extending from Taiwan to Mainland China, Macau, the United States, etc. Since the global outbreak of the COVID-19 pandemic in late 2019, and currently in the post-pandemic era, ECOVE Environment Corp. has always been committed to ensuring the safety and health of our employees as our top priority, and continues to identify the potential impact of the pandemic on our work environment and operations. At the beginning of the outbreak of the COVID-19 pandemic, ECOVE Environment Corp. recognized that its business is closely related to people's livelihood and that its daily operations could not be interrupted on a single day. We immediately set up a pandemic prevention team in accordance with the Group's pandemic prevention regulations, with the personal participation of senior executives in preparation of a Business Continuity Planning (BCP), which was activated in accordance with the pandemic prevention hierarchy and included measures such as zoning, shifting to work, working from home, and using Checkerboard Seating. With the development of the pandemic, the Company has followed the "COVID-19 Work Safety Guidelines during the Pandemic" issued by BSI and ISO, and reviewed various pandemic prevention measures through a systematic approach and PDCA cycle to ensure that the Company could take appropriate measures in a timely manner in response to the development of the pandemic in an attempt to guarantee uninterrupted operations and protect the safety and health of employees. ECOVE Environment Corp. has always been good at applying intelligence and big data management. We have iO&M (intelligent Operation & Maintenance) systems in our operations. Through intelligent and HSE management, we are able to effectively reduce the risk of pandemic infection through the movement and contact of personnel. In terms of pandemic prevention and information dissemination on HSE, ECOVE Environment Corp. used the Group's "CTCI University" employee education platform to promote health education and disseminate the latest pandemic prevention information through the intranet, so that employees at all sites can obtain new information on pandemic prevention simultaneously. In addition to maintaining the health of employees through policies and intelligent management, the pandemic prevention and protection network that ECOVE Environment Corp. has built for its employees includes the continuous distribution of personal masks, protective masks, and other pandemic prevention materials; the addition of "health insurance for new statutory infectious diseases" and "pandemic prevention insurance" for all employees, with premiums fully covered by the Company; and cooperation with Taipei Medical University Hospital to conduct corporate quick screening and encourage employees to take home quick screening and vaccination, etc. For those who need to be isolated when they return to their hometowns, the Company arranges for a pandemic prevention hotel and keeps track of their health status through "my CTCI". For those who are unable to return to their hometowns, we also provide care through video, email, and phone, and thank the families for their support and understanding. ECOVE Environment Corp. regards its employees as its most important asset and upholds its commitment to HSE management, "Safety First, Employees First". In the future, we will adjust our pandemic prevention and response measures on a rolling basis according to the development of the pandemic, establish a long-term safety and protection network to protect our employees, and do our best to safeguard the health of our employees.



Social Participation

2,000 hours

Connected
4,370 people

Operations-related community activities

Long-term community building

Friendly corporate volunteers for the common good

- Taiwan in My Eyes 120H
- Step by step: Factories for Sustainable Environmental Education
- Cultivate a Green Future with Environmental Education Facilities

- Be neighborly and be part of the community
- Protect community environment and be a good

- Be friendly to charity and care for the disadvantaged
- Respond to international initiatives and support green sustainability

As a corporate citizen, giving back to the society and fulfilling corporate social responsibilities have always been the philosophies and goals ECOVE upholds on top of dedicating efforts to the Company's operations. Hence, besides the long-term commitment to the improvement of its main business, the Company is committed in long-term social participation with specific themes. With three themes of "operations-related community activities", "long-term community building" and "friendly corporate volunteers for the common good", personnel is encouraged to participate in happy and meaningful volunteer activities and contribute to society through practical actions and strike a balance between work and life. Despite the severe pandemic in 2021, ECOVE Environment Corp. still committed to public welfare and cared for the disadvantaged in the local community. A total of 473 employees were involved in ECOVE's social participation activities for a total of 2,000 hours. We held 74 environmental education sessions with a total of 4,370 participants.

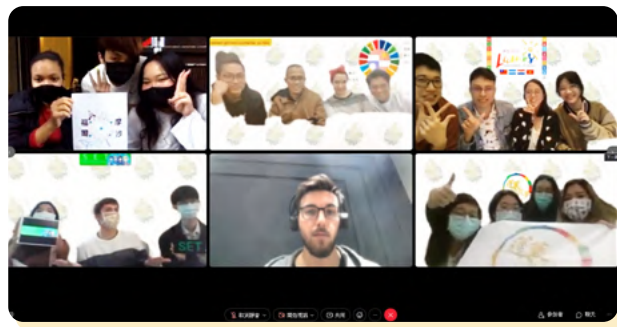


Operations-related Community Activities

Environmental protection requires environmental education and environmental communication channels to promote public participation. Therefore, ECOVE actively promotes environmental education, and five of our operation sites have obtained the Environmental Education Facilities and Venues Certification. Besides serving as an environmental protection learning center where members of the public can learn and have fun at the same time, Miaoli Incineration Plant is also a designated visiting facility for the international activity, "Taiwan in My Eyes 120H." In 2021, ECOVE once again partnered with CTCI Education Foundation to jointly map out the five-year plan for "Step by step: Factories for Sustainable Environmental Education," continuing to plan a brand-new curriculum, taking the initiative to reach out to all elementary schools in Taiwan to inculcate sustainable lifestyles to our future leaders, aligning with the UN initiatives while building the foundation for environmental education.

5 year Taiwan in My Eyes 120H

CTCI Education Foundation (CTCIEF) and Center for Corporate Sustainability (CCS) co-organized "Taiwan in My Eyes 120H," an international event incorporating the United Nations' Sustainable Development Goals (SDGs). Every year, special arrangements are made for students to visit leading enterprises in Taiwan. In 2021, ECOVE's headquarters was designated as a virtual visit site. Built with smart energy management and eco-friendly design, our headquarters has won the EEWB Green Building Label - Diamond and Smart Building Label - Diamond in Taiwan, as well as the LEED certification - Gold in the United States. In the virtual tour, the student visitors could see the people-oriented, functional, and homey work environment in the headquarters; the headquarters itself is also a green and smart building that is interactive, energy-efficient, and environmentally sustainable. The student visitors made their voices heard internationally through social media such as Facebook, so that the world can see a Taiwan with deeply-rooted sustainability culture.



Group photo of student visitors online.



ECOVE's headquarters won the EEWB Green Building Label - Diamond and Smart Building Label - Diamond.

5 year plan Step by Step: Factories for Sustainable Environmental Education

Since 2018, with the intention of enabling our next generation to understand the relationship between people and the natural environment, and between human and man-made environment (including society, economy, etc.) while ingraining the fundamental concepts and values towards the environment and sustainable lifestyles, ECOVE has partnered with CTCI Education Foundation to launch "Step by Step: Factories for Sustainable Environmental Education," a three-year plan directed at elementary schools. Cultivating deeply across the whole of Taiwan, ECOVE has proactively reached out to the schools to drive environmental education, teaching the children about sustainable lifestyles. In 2021, ECOVE once again partnered with CTCI Education Foundation to map out the five-year plan for "Step by Step: Factories for Sustainable Environmental Education" for elementary schools in Taiwan. 2021 was the first year of the five-year plan, and the enthusiasm and the efforts put in by the environmental education teams was recognized by the teachers and students. In 2021, some 48% of the sessions were repeat invitations from schools that had gone through the sessions before.

This activity used ECOVE's incinerators operation and recycling and reuse as core teaching materials, and the content was designed according to age. Pairing environmental protection concept with DIY lessons, such as recycled paper handmade fans, seed recycling handicrafts, etc. Students can pick up the principle of incineration power generation, environmental protection label, and waste classification among other topics in a fun and educational manner. Moreover, through video clips, our children would find out that there are 100 million metric tons of plastic waste in the ocean and were guided to learn to say no to plastic products such as straws.

In 2021, 21 sessions of "Step by Step: Factories for Sustainable Environmental Education" were held, with 2,759 students participating. These sessions were held across Taiwan from Zhongxiao Elementary School in Keelung to Kanding Elementary School in Pingtung, even to rural elementary schools such as Chang Le Primary School in Keelung, Anhe Elementary School in Chiayi, and Jin-Hu Elementary School in Tainan City. ECOVE hopes that through continuous promotion, environmental education will permeate from school children to families, and then to rural and local neighborhoods, so as to maintain our beautiful living environment.

In 2021, ECOVE launched a brand-new "Step by Step: Factories for Sustainable Environmental Education" five-year plan with the UN SDGs as the core focus and developed new curricula embracing SDGs in daily life. We welcomed all elementary schools in Taiwan to make appointments with us.



Our environmental education team visited Gangshan Elementary School in Kaohsiung for a third consecutive year to teach students how to live a sustainable life with new SDGs material.



Our environmental education team led students from Anhe Elementary School in Chiayi to turn waste paper into pulp and then into recycled paper, making paper like Cai Lun, an Chinese inventor of paper.



The environmental education team used cartons to teach rural students from Wenxian Elementary School in Tainan the waste treatment process at the incineration plant.



After watching the video of disasters, students from Chang Le Primary School in Keelung raised hands to share their opinions about climate change mitigation and environmental actions they took.

● Social benefits of Step by Step: Factories for Sustainable Environmental Education

	2021 (5-year plan)	2018~2020 (3-year plan)
Number of sessions	21	65
Number of participants	2,759	8,116

100%

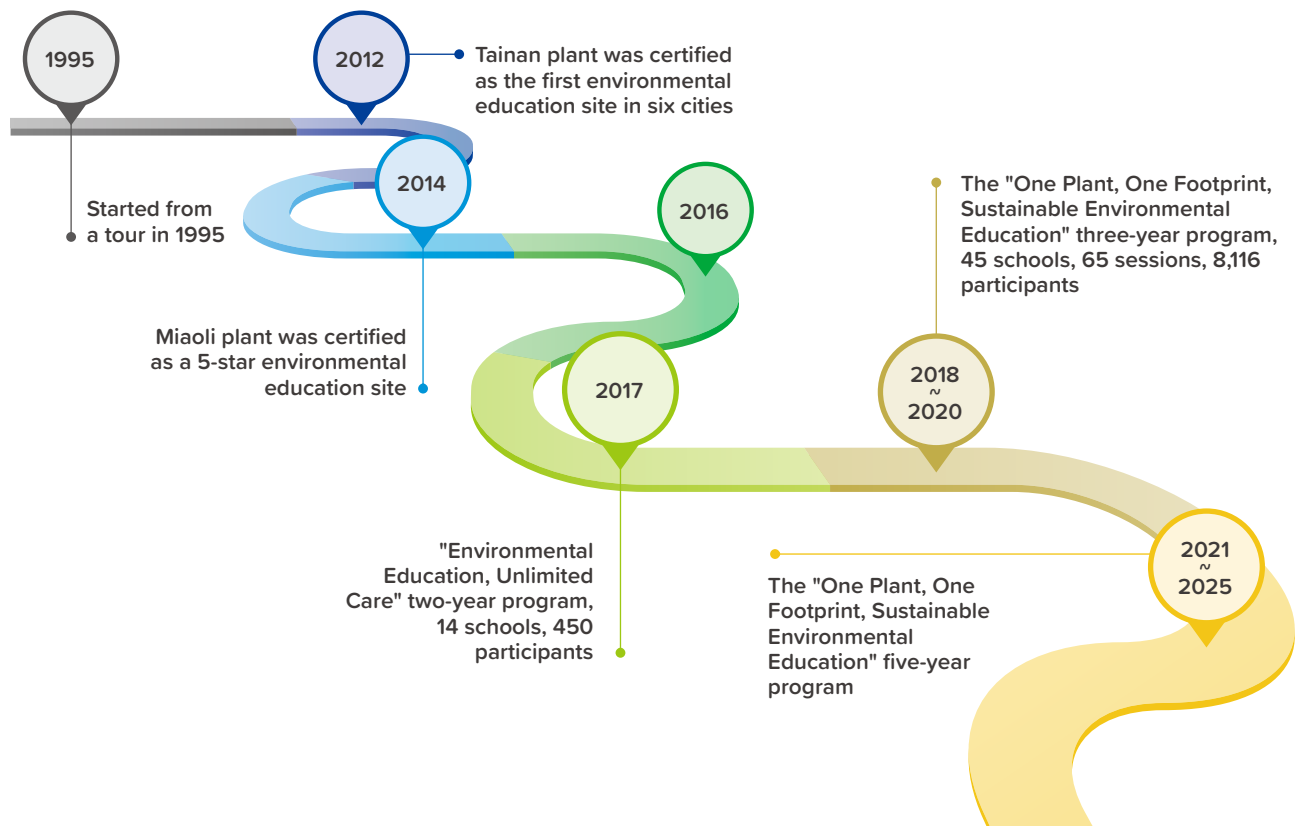
were aware that CTCIEF was the organizer of this event

98%

increased students' awareness and promoted a culture of sustainability in schools

According to the results of the survey, 100% of the respondents knew and were aware that CTCIEF was the organizer of this event and 98% of the respondents agreed that ECOVE effectively increased the students' awareness of sustainable development and promoted a culture of sustainability in schools.

● ECOVE's development of environmental education



5 facilities

Certificated Environmental Education Facilities for All-Age Learning

Environmental education facilities refer to professional facilities which integrate environmental education professional capabilities, professional curricula, and appropriate environmental education resources on the land regions with the characteristics of environmental education resources, and provide professional services for school students and the general public, so as to achieve the multi-functional objectives of education, research, conservation, culture, and recreation. This coincides with ECOVE's desire to engage and contribute to the community. Therefore, ECOVE uses its resource cycling core business functions and designed a variety of environmental education courses for different age groups based on the process characteristics, humanities, and geographical characteristics of each incineration plant. ECOVE participated in the certification of environmental education facilities and places and has now obtained five environmental education facilities certifications.

ECOVE has long paid attention to local environmental and ecological issues while obtaining material from local sources. By merging with the regular business, ECOVE essentially diversifies the environmental education facilities, transforming dry and complex environmental protection knowledge into interesting experiential lessons to promote knowledge and skills for environmental protection. Taking a green life cycle for example, we strive to create a green supply chain and control carbon footprints through technology, in an attempt to maximize our enterprise value in ecology, production, and life; we also have our environmental education facilities certified to instill environmental knowledge in every employee. Each of our sites has its own unique pedagogy and environmental protection mission. New environmental protection lessons will be progressively developed in future to provide neighboring communities with environmental educational services that are more interesting and with local characteristics. At ECOVE's environmental educational facilities, on top of seconding certified colleagues as lecturers, there are also rich interactive experiential content. During the pandemic outbreak in 2021, ECOVE cooperated with the government's pandemic prevention policy and did not open the facilities to visitors in the first half of the year. In the second half of the year the facilities were progressively opened for visits and visitors have to wear masks before entering the premises. Entry to various environmental education sites would only be allowed after temperature screening and cleaning of hands with alcohol sanitizers. In 2021, due to the outbreak of COVID-19, guided tours were unavailable for some periods. That said, 53 sessions of environmental education services were still provided, with 1,611 participants.



Preschool children went on a field trip to Miaoli Plant and responded enthusiastically to environmental questions.



Students from Guiren Elementary School visited Tainan Science Park Plant and learned about the importance of energy conservation and carbon reduction from an in-depth explanation of climate change.



Director of Bureau of Environmental Inspection visited Tainan Science Park Plant and recognized its efforts to impart environmental knowledge to the public. Our employee was explaining the incineration process using the model made of waste packaging materials.



Tainan City Occupational Health and Safety Family visited Tainan Plant to impart knowledge of occupational safety and health (OSH).



Students from Tung Hai University visited Houli Plant to learn about the waste treatment process and the importance of waste pre-treatment.



Director of Bureau of Environmental Protection, Keelung City visited the New Taipei City Gravel Contact Oxidation Treatment and Water Resource Center and recognized its outstanding performance.



Secretary General of Control Yuan visited Tainan Science Park Plant and commended ECOVE for properly handling the waste in the park.





Environmental education courses both online in response to the pandemic

Our environmental education team rolled out environmental education courses both online and offline to promote environmental education amid the pandemic.



● ECOVE's Environmental Education Facilities Certification



Keelung Plant



Miaoli Plant



Houli Plant



Tainan Plant



Tainan Science Park Plant

Through a rich and diverse teaching experience, it is elucidated that although waste incineration has its imperfections, it also has its value, such as the transformation of the former sanitary landfill into a restoration park. We hope to inspire visitors to care and love the environment more through their own actions, so that this beautiful earth will last forever.

- Based on the idea of "Green DreamWorks", five fictitious green Mercurians, each with different personalities and specialties, had to perform different environmental protection tasks after coming to earth from outer space, representing the environmental protection actions of the incinerator plants. Through featured theme exhibition spaces, interactive games, and online multimedia functions, infused with elements of incineration plant operation status and environmental protection knowledge, a rich and interesting environment and education atmosphere is thus created. Adjacent to wetlands, the habitats of purple butterflies and coastal plants, it is the only incineration site in Taiwan that coexists with wetlands.
- The smart environmental education facility is granted five-star certification and offers online environmental education courses amid the pandemic. In the future, environmental courses will be provided both on-site and offsite.

Combining waste incineration treatment and Dajia Stream water resources conservation to become the main focus, visitors can find out how the incineration plant can solve the waste treatment problems under the principles and objectives of "stabilization," "sanitation," and "resources." Through "The Past and Present of Dajia Stream," visitors can fully understand the sewage treatment and water quality monitoring mechanism of the plant, to better understand the importance of water resources conservation.

Tainan Plant is a planned high-quality environmental education space which blends humanity and natural characteristics with creative teaching of waste incineration cogeneration, resource recycling, and composting of raw food waste as the main focus of the lesson, becoming a place of incineration and environmental education functions.

The concept and actions of sustainable production have been transformed into environmental education, and three series of environmental education courses on water resources, waste treatment, and nature conservation have been developed based on existing resources and characteristics.

Note: Miaoli Plant and Tainan Science Park Plant were both awarded five-star certification.

活動項目	活動對象	申請方式
各式環教參訪	學校、機關、團體與社區單位均可申請	請以E-Mail: ecovecsr@ecove.com 與環教專員聯繫。

Environment protection is not a far-fetched, difficult matter. Through various environmental education courses, we can practice green actions in life to be friendly to the planet and protect it! Our environmental education team provides a variety of environmental education courses on SDGs in daily life, incineration and power generation, day-to-day environmental protection, recycling DIY, and other topics for free. Applications are welcomed!

Activity: Various site visits Attendee: Schools, authorities, organizations, and communities

Long-term Community Building

In the past, ECOVE's operating sites were classified as NIMBY facilities, which gave local residents a sense of disgust and insecurity. ECOVE takes the initiative in showing concern for the locals and strives towards pollution reduction, energy-saving and carbon reduction, and environmental beautification and greening. It also makes the effort to get along with the neighbors, safeguards the community environment, organizes coastal cleanups, participates in community activities, builds environmental protection facilities, and maintains a quality and safe living environment, transforming a "NIMBY facility" which people hated in the past, into a facility welcomed by everyone.

Neighborliness and Integration to Communities

As a corporate citizen, ECOVE emphasizes on the interactions with the community and seeks common good with the neighborhoods. ECOVE's Linkou Water Resources Center merged 3C technologies with environmental education and launched a smartphone microscope for learning. Through interactive games, members of the public can observe microorganisms in water, learn about domestic wastewater treatment, and cultivate the concept of cherishing water resources. ECOVE's Houli Plant, located in Taichung's Jiushe community, has co-organized the "Jiushe Cultural Festival" for the past 18 years. The event merges innate traditional culture with new environmental protection concepts to develop the characteristics of exchange and inheritance. Meanwhile, for Tainan Plant, which is surrounded by abundant ecology, has signed a memorandum of cooperation on environmental education with the Chengxi Community Development Association of Annan District, Tainan City to jointly assist the development of environmental ecology and green industry in Annan District, Tainan City, and deepen the public's appreciation for and attention on the development of environmental ecology and industry in the area. In addition to investing relevant human and material resources to engage the community, ECOVE's employees and senior executives have enthusiastically supported activities organized by the community. Senior executives and personnel brimming with enthusiasms can be seen with their families at events, including "Go Green Family Day and Environmental Volunteer Commendation Conference" in Miaoli Plant, "Exercise Day in Southern Taiwan Science Park," and "Hiking along Wu River" and "Painted Embankment Walk and Eco-school Recycling Campaign" in Wurih Plant, illustrating ECOVE's enthusiasm to integration in communities.



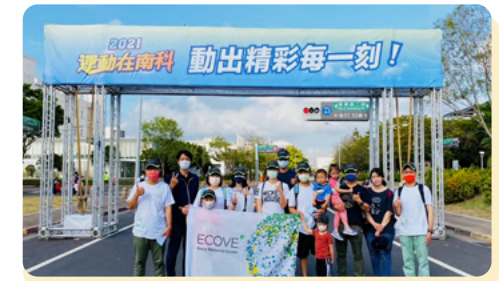
As the only incineration site in Taiwan that coexists with wetlands, Miaoli Plant made an all-out effort to maintain the ecology of the surrounding forest by picking up garbage along the pathway and keeping the forest clean.



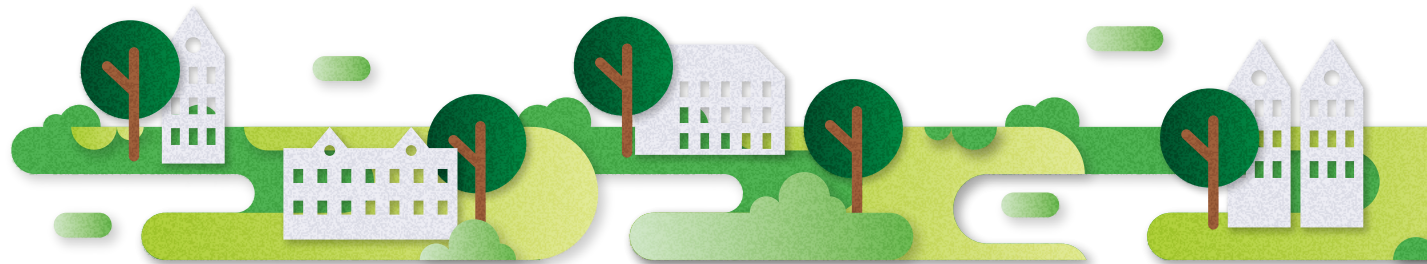
Every year, the Houli Plant participates in local community activities, promoting the cultural heritage of local communities and contribute to the reduction of carbon and to the fight against global warming with practical actions.



Our environmental education team led a tour to "Qing Yan Eco-Joss Paper Furnace," Taiwan's first joss paper furnace, next to Chengxi Plant and imparted the incineration process to the participants.



Tainan Science Park Plant participated in the "Exercise Day in Southern Taiwan Science Park" and practiced self-initiated epidemic prevention.



Protecting the Community Environment and Being a Good Neighbor

On top of being a trailblazer among green enterprises, ECOVE is also a good neighbor in the community. Over time, ECOVE has spared no effort in the maintenance of both the plant's premises and the surrounding environment, carrying out regular or ad hoc road cleaning to reduce flying dust, planting flora, restoring lawns, increasing greenery, and recycling waste into installation art pieces so as to provide a high-quality living environment and cityscape. Some of ECOVE's operating sites located near the sea, such as Keelung, Taoyuan, Miaoli, and Tainan Science Park plants, initiated coastal cleanup activities. While these coastal cleanup exercises might not significantly reduce the volume of waste in the sea, these activities can spark the

awareness of environmental protection among personnel and spur them to adopt a plastic reduction and plastic-free lifestyle. In 2021, we carried out 456 hours of community service, organized six coastal cleanups, and collected 1,015 kg of garbage. When enterprises draw closer to the society, the role of the enterprises is beyond generating output value, but also creating their own "value." We believe that in time to come, with the participation of corporate partners, greater and stronger energy will be injected into the communities and we can realize a friendly and sustainable development lifestyle for the common good.

Created a sustainable park combining art installations

With the concept of rainwater reclamation and reusing idle space, Tainan Science Park Plant created a sustainable park combining art installations (flower windmills and cows) made from discarded oil drums and an aquaponics system.



Participate in beach cleaning activities with the community

Tainan Science Park Plant held the "More Action, Less Plastics" coastal cleanup event to keep up with coast cleanup efforts.



Keelung Plant did a great job in maintaining the "Tianwaitian Repopulation Park"

Keelung Plant did a great job in maintaining the "Tianwaitian Repopulation Park," where a 200-meter long corridor is covered with 250 larch pine trees. It has become a popular photography destination following extensive media coverage.



Protect marine ecology with practical actions

We have long organized coastal beach cleanup activities in Keelung to protect marine ecology with practical actions and maintain good relationships with local communities.



"More Action, Less Plastics" coastal cleanup

Our operation close to the sea participated in a beach cleanup with community residents to protect the marine ecology and make the environment better.



Protect the beaches and the ecology

Tainan Science Park Plant organized the coastal cleanup event, where personnel came together to protect the beaches and the ecology.



Friendly Corporate Volunteers for the Common Good

Employees from ECOVE set up the "Friendly Charity Society" and took the initiative to organize charitable activities. To further emphasize corporate social responsibility on the employees, ECOVE actively cooperates with external parties in practicing "green living" in everyday life.

Friendly Charity, Concern for the Disadvantaged

In 2017, ECOVE established the Friendly Charity Society, which is open to personnel to propose caring actions and share good ideas on public welfare and innovative charitable activities. There were three projects carried out in 2021: a five-year plan for donation of computers to rural areas, care for the disadvantaged at Kindergarten, Guanying, and donation of hypochlorous acid water (HOCl). In addition, ECOVE continued to initiate activities for donations of receipts, second-hand clothes, and used books.



Supporting the donation of computers to rural areas to fulfill dreams for a fifth consecutive year in hope of shrinking the digital gap for rural schools.



ECOVE supervisors leading personnel to Kindergarten to assist in the packing of care packages and getting involved in community services.



Using environmental education-oriented handicraft workshops, ECOVE engaged with seniors in the community to spend an environmentally friendly time together.



Donating self-prepared HOCl to social welfare organizations to protect the health of the community residents in line with the government's policy on epidemic prevention.

Response to International Initiatives

ECOVE actively connects with external initiatives, with senior executives and personnel serving as initiative ambassadors and leading all personnel to embrace green practices in their daily work. All operating sites respond to international initiatives in promoting energy conservation and carbon reduction, reinforcing personnel's attention on issues such as climate change and ecological environment, etc. On top of that, environmental issues are infused into daily lives through the participation of activities and in view of the global climate change, we emphasize that everyone has the ability and responsibility to change the world, and as long as we put our heart and soul into caring for the land we live in, we can support our planet.



Earth Day

- "Out in Full Force" - each plant and operating site launched small green acts, placing potted plants in offices, thereby creating green offices, beautifying the environment, and elevating productivity while reducing carbon to protect the earth!
- Biodiversity - Keelung Plant collaborated with the Taiwan Wild Bird Federation to promote the conservation of Black Kite in conjunction with environmental education courses.
- Wetland conservation - Miaoli Plant is the only incineration plant located in a wetland in Taiwan. The ecological conservation of the wetland was considered during the planning. In particular, the direction of the plant was altered and the site was reduced by one hectare. In recent years, the plant also has partnered with the local communities to restore the purple crow butterflies.
- Live teaching materials for environmental education - after the discovery of *Spiranthes sinensis* at the Linkou Water Resources Center, immediate efforts were taken to conserve and transplant the plant. Currently, the plants are growing well and have become the best live teaching materials.



World Oceans Day

With "plastic reduction" as the theme, we organized "Chop-Chopsticks, Love the Earth", encouraging personnel to refuse disposable cutlery and organized five coastal cleanups. Although these coastal cleanup exercises might not significantly reduce the volume of waste in the sea, these activities can spark the awareness of environmental protection among personnel and spur them to adopt a plastic reduction and plastic-free lifestyle.



World Rivers Day

On the World Rivers Day, ECOVE signed the "Tamsui River Convention," paying attention to water resources issues, and caring and protecting the rivers together with company-wide green actions.



地球一小時倡議大使



地球地球日倡議大使



地球海洋日倡議大使



地球洗手日倡議大使



地球糖尿病日倡議大使

In 2021, ECOVE connected with international initiatives and infused environmental sustainability issues into daily lives, reminding personnel to take care of their own health while supporting the notion.



Earth Hour

Illuminations at all units were switched off for an hour on that day, and the week was designated as energy conservation week. Along with it, a Lights Out event was organized once during the summer and winter seasons to incorporate environmental issues into daily life such that energy conservation can become a habit.

關燈、減碳、愛地球！
我們將環境議題融入日常生活
無論節水、節電、節能
我們惜以為常，也習以為常

ECOVE 愛地球
ECOVE 響應國際地球一小時
2021.03.27 - 2021.04.02
各據點各日關燈一小時

This Earth Hour
我支持地球一小時
ECOVE 關燈大使



Global Handwashing Day

We called on personnel to strengthen their awareness on hygiene and prevent disease infection through the simple but important act of washing hands. Employees established the right mindset of handwashing and implemented a seven-word formula of "palms, back, cross, interlock, thumbs, fingertips, wrist" for hand washing. We constantly reminded ourselves that washing hands frequently was protecting ourselves while protecting others.



World Diabetes Day

We asked employees to heed their health conditions and made an all-out effort to keep every employee healthy. Employees were encouraged to take stairs instead of taking elevators in their daily lives, making "More Steps, More Healthier" not just a slogan.



均衡飲食最健康、規律運動保健康
倡議大使張文達關心您 ECOVE 關心您

● Performance of response to international initiatives for energy conservation and carbon reduction

Initiative	Energy conservation and carbon reduction activity	Description of energy conservation and carbon reduction activity	Carbon reduction
 Earth Hour	Energy Conservation Week	We switched off the air conditioning for one hour during lunch breaks to reduce annual CO ₂ e emissions by 886 kg (based on the power emission coefficient for 2020 published by the Bureau of Energy. About 0.502 kg of CO ₂ e is emitted per kWh). ^{Note 1}	886 kgCO ₂
	Energy conservation in winter Light off in summer	We switched off the air conditioning for one hour during lunch breaks to reduce annual CO ₂ e emissions by 6,052 kg (based on the power emission coefficient for 2020 published by the Bureau of Energy. About 0.502 kg of CO ₂ e is emitted per kWh). ^{Note 1}	6,052 kgCO ₂
 Earth Day	Let's eat green	A total of 10,420 vegetarian meals were served in response to having vegetarian meals (based on 0.22 kg CO ₂ reduction per vegetarian meal), and the carbon reduction was 2,292 kg CO ₂ e. ^{Note 2}	2,292 kgCO ₂
	Office greenery	We encouraged personnel to place potted plants in offices to increase work productivity and reduce a bit of air pollution. Green can relax the eyes and alleviate fatigue. It can also subtly relieve lethargy, tension and release pressure.	-
 World Oceans Day	ECOVE loves oceans	A total of 925 kg of garbage were collected during coastal cleanup activities (carbon reduction for every kg of garbage = 2.06 tCO ₂ e/t garbage), with a carbon reduction of 849 kg CO ₂ e. ^{Note 3}	1,906 kgCO ₂
	Chop-Chopsticks, Love the Earth	Personnel supported the "Chop-Chopsticks, Love the Earth, Bring Your Own Cutlery" campaign, saving a total of 24,690 disposable cutlery (carbon reduction of 0.1 kg CO ₂ e per meal of not using single-use cutlery), with a carbon reduction of 2,463 kg CO ₂ e. ^{Note 2}	2,469 kgCO ₂
	Old Clothes Love	We donated a total of 230 pieces of clothing, reducing 966 kg CO ₂ e for the earth (on average, one piece of clothing can reduce carbon reduction of 4.2 kg CO ₂ e). ^{Note 2}	966 kgCO ₂
 World Diabetes Day	Walk More Get Healthier	Our employees made conscious efforts to take the stairs during and after work to achieve the goals of exercising and carbon reduction, with a carbon reduction of 570 kg CO ₂ e (based on the carbon reduction of 0.22 kg CO ₂ e per floor climbed). ^{Note 2}	570 kgCO ₂
Total			15,141 kgCO₂

Note 1 : The calculation of carbon reduction results is based on the power emission coefficient for 2020 published on the Industrial GHG Voluntary Reduction Information Platform: <https://ighvr.tgpf.org.tw/TW/DocDownload.aspx>

Note 2 : The calculation of carbon reduction results is based on the built-in coefficient of carbon emission calculator on the EPA's platform: https://ghgregistry.epa.gov.tw/ghg_rwd/Main/CO2/CO2_3?Type=6

Note 3 : The calculation of carbon reduction results is based on the parameters and coefficients on the Taichung City Low Carbon Life Website: <https://www.lowcarbontaichung.com/News?proglD=PUBLIC002&dsn=857>

Most Reliable



ECOVE offers free courses in three subject fields on the Global Training System

Talent is ECOVE's most important asset. To keep abreast of international trends, our parent company, CTCI, established the "CTCI University" in 2020. With all-round vocational training, CTCI University aims to train talent to have an international outlook, be competent at work, and meet the needs of the times. Aiming to develop ESG talent for the nation, CTCI University set up the "Global Training System (GTS)," where over 100 courses are available online free of charge for the public and professionals in the industry, government, and academia, hoping to maximize the value of CTCI's expertise and experience in the industry.

CTCI University is headed by Kuo-En Chang, the former president of National Taiwan Normal University, who has planned six colleges together with the provost and the heads of business departments: College of Quality and HSE, College of Engineering and Design, College of Project Integration, College of Business Management, College of Leadership, and College of Co-Education. Each college has various departments and programs. ECOVE becomes a member of University by establishing the Department of Circular Economy within the College of Project Integration. ECOVE has designed 24 courses on incineration, waste management, recycling, and solar energy that are, along with courses of other colleges, tailored to the requirements of each position. ECOVE adopts a mastery learning approach to online course planning. Each course is divided into 15-minute units to make learning more regular. In a 15-minute time frame, students have enough time to learn and practice step by step, so as to master knowledge learned from each unit. All local and overseas-based employees can access the online platform, unrestricted by geographical constraints, through computers, mobile phones, and other network-connected devices to watch and review various courses at any anytime, anywhere, and for an unlimited number of times. Through company-wide training and synchronized learning, employees are expected to boost their competence significantly. CTCI University has different training plans for employees at different stages. For new recruits, they will receive a set of exclusive orientation training as soon as they report in for duty to become familiar with the job duties step by step.

ECOVE also pays attention to the learning results of employees. Based the results of annual performance evaluations, department heads can see whether employees have applied their professional knowledge to work after training, so as to identify any functional gaps; employees can also gain a better understanding of their own deficiencies and improve them through training, so as to learn and grow continuously. In 2021, ECOVE designed the programs for incineration, renewable energy, and recycling on the GTS to share its expertise and valuable experience with the public in line with CTCI's vision. These programs will be available free of charge for the public and ESG talent with our knowledge and experience in the industry.



CTCI Online Learning Platform.



Message
from Chairman

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About This Report

Reporting Policy

ECOVE Environment Corp. (hereinafter referred to as "ECOVE" or "the Company") has published sustainability reports for 12 consecutive years since 2010. Every year, we proactively disclose non-financial information to all stakeholders who are concerned about ECOVE, ceaselessly relaying the achievements in sustainable management and fulfilling communications with stakeholders while responding to their needs. The 2021 Sustainability Report was published in June 2022, and the following Report is scheduled to be released in June 2023.

<p>Time frame for information disclosure</p> <p>January 1, 2021 to December 31, 2021</p>	<p>GRI level</p> <p>GRI Standards Comprehensive option</p>	<p>Assurance level</p> <p>Type II - High level of assurance</p>	<p>External verification / Assurance</p> <ul style="list-style-type: none"> Financial data - Pricewaterhouse Coopers (PwC) Quality management systems - ISO 9001:2008 Environmental management systems - ISO 14001:2015, Greenhouse Gas (GHG) inventory - ISO 14064:2006 Occupational Safety and Health (OSH) management - ISO 45001:2018 Sustainable data - AA 1000 AS:2008
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<p>Boundaries of information disclosure</p>	<p>Within the organization</p>	<p>The information disclosed in this report covers ECOVE from January 1 to December 31, 2021, including various actions and performance data of business management, environmental protection, and social participation. The boundaries of this report includes ECOVE and other subsidiaries located in Taiwan. The actions of each subsidiary are separately indicated in the report.</p>
	<p>Outside the organization</p>	<p>Boundaries of disclosure outside of the organization include government, customers, shareholders, suppliers, and the community.</p>
<p>Review</p>	<p>Internal reviews</p>	<p>The information and statistics found in this report were collected and compiled by our employees from various departments. These were first reviewed by departmental super-visors before submission to the reporting team for confirmation. Concurrently, an external consulting team was commissioned to provide recommendations for improvement. After all the data and information were fully prepared, they were individually reviewed by each department head, and finally approved by the Chairman. The information and data in this report were all established upon standardized specifications as a standard process for internal management to ensure the credibility of the quality of data and information.</p>
	<p>External reviews</p>	<p>The financial data in this report is the Annual Financial Report certified by PwC and were calculated in NTD. The environmental management system (ISO 14001), quality management system (ISO 9001), and OSH management system (ISO 45001) have been verified by impartial third parties. The sustainability information in this report was verified by an impartial third party based on AA 1000 AS.</p>



GRI Standards Index

Management Approach and Disclosure of Material Issues

Material Issue	Series	Disclosure Item	Description	Corresponding Chapters	Page No.
Supply Chain Management	GRI 204 Procurement Practices	204-1	Proportion of spending on local suppliers	Sustainable supply chain management	40
		205-1	Operations assessed for risks related to corruption	Legal Compliance and Internal Control and Internal Audit	29
Ethics and integrity	GRI 205 Anti-corruption	205-2	Communication and training about anti-corruption policies and procedures	Legal Compliance and Internal Control and Internal Audit	29
		205-3	Confirmed incidents of corruption and actions taken	Legal Compliance and Internal Control and Internal Audit	29
		-	Develop renewable energy power generation efficiency, set short-, medium- and long-term power generation targets, and expand investment opportunities	Driver of Circular Economy	56
Development of Renewable Energy	Development of renewable energy (specific to ECOVE)	-	Develop renewable energy power generation efficiency, set short-, medium- and long-term power generation targets, and expand investment opportunities	Driver of Circular Economy	56
Professional research & development and technical competency	Professional research & development and technical competency (specific to ECOVE)	-	Improve the management efficiency of the incineration plants which ECOVE operates on behalf, and provide various services such as waste clearing technical consultation, environmental protection, construction and equipment maintenance and sales agent for pollution prevention, and incinerator improvement planning/design	Development, Integration and Application of New Technologies ; Development of Intelligent Management Tools	37
Development of Recycling and Reuse	Development of Recycling and Reuse (Specific to ECOVE)	-	Research and develop product range, technologies, and supplier and sales competitiveness for resource cycling, as well as research and development and quality enhancement of customized products	Development, Integration and Application of New Technologies ; Development of Intelligent Management Tools	37
Air pollution prevention	GRI 305 Emissions	305-1	Direct (Scope 1) greenhouse gas (GHG) emissions	Cogeneration and Sales of Electricity	52
		305-2	Energy indirect (Scope 2) greenhouse gas (GHG) emissions	Cogeneration and Sales of Electricity	52
		305-3	Other indirect (Scope 3) GHG emissions	Plan for the future to calculate	-
		305-4	GHG emissions intensity	Cogeneration and Sales of Electricity	52
		305-5	Reduction of GHG emissions	Autonomous Organizational Inventories	54
		305-6	Emissions of ozone-depleting substances (ODS)	Information not available	-
		305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Upload continuous monitoring system information to EPA in real time	-
Employee caring	GRI 401 Employment	401-1	New employee hires and employee turnover	Talent Composition and Compensations	74
		401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Human Rights Protection and Welfare	77
		401-3	Parental leave	Human Rights Protection and Welfare	77



Material Issue	Series	Disclosure Item	Description	Corresponding Chapters	Page No.
Human rights and labor relations	GRI 402 Labor/Management Relations	402-1	Minimum notice periods regarding operational changes	Talent Composition and Compensations	74
		403-1	Occupational safety and health management system	Occupational Disaster Prevention	88
		403-2	Hazard identification, risk evaluation, and incident investigation	Occupational Disaster Prevention	88
		403-3	Occupational health services	Occupational Disaster Prevention	88
		403-4	Worker participation, consultation and communications regarding occupational health and safety	Occupational Disaster Prevention	88
Occupational Safety and Health (OSH)	GRI 403 Occupational Health and Safety 2018	403-5	Worker training regarding occupational health and safety	Occupational Disaster Prevention	88
		403-6	Promotion of worker health	Occupational Disaster Prevention	88
		403-7	Preventing and mitigating occupational health and safety impacts directly related to business relationships	Occupational Disaster Prevention	88
		403-8	Workers covered by occupational safety and health management system	Occupational Disaster Prevention	88
		403-9	Work-related injuries	Occupational Disaster Prevention	88
		403-10	Work-related ill health	Occupational Disaster Prevention	88
Career development and training	GRI 404 Training and Education	404-1	Average hours of training per year per employee	Talent Nurturing	79
		404-2	Programs for upgrading employee skills and transition assistance programs	Talent Nurturing	79
		404-3	Percentage of employees receiving regular performance and career development reviews	Talent Composition and Compensations	74
Human rights and labor relations	GRI 401 Employment	401-1	New employee hires and employee turnover	Talent Composition and Compensations	74
		401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Human Rights Protection and Welfare	77
		401-3	Parental leave	Human Rights Protection and Welfare	77



GRI Content Index

Disclosure Item	Description	Corresponding Chapters	Page No.
GRI 102 : General Disclosures			
102-1*	Name of Organization	About ECOVE	04
102-2*	Activities \ brands \ products \ and services	About ECOVE	04
102-3*	Location of headquarters	About ECOVE	04
102-4*	Location of operations	About ECOVE	04
102-5*	Ownership and legal form	About ECOVE	04
102-6*	Markets served	About ECOVE	04
102-7*	Scale of the organization	About ECOVE	04
102-8*	Information on employees and other workers	Talent Composition and Compensations	74
102-9*	Supply chain	Sustainable supply chain management	40
102-10*	Significant changes to the organization and its supply chain	There were no significant changes in the Company's organizational structure or operating rights during the reporting period	-
102-11*	Precautionary principle or approach	Risk management	31
102-12*	External initiatives	Friendly Corporate Volunteers For the Common Good	103
102-13*	Membership of associations	Participation in External Organizations	24
102-14*	Statement from senior decision-maker	Message from Chairman	02
102-15	Key impacts, risks, and opportunities	Legal Compliance and Internal Control and Internal Audit, Risk Management ; Management Performance and Industry Outlook	29 31 34

Disclosure Item	Description	Corresponding Chapters	Page No.
102-16*	Values, principles, standards and norms of behavior	Legal Compliance and Internal Control and Internal Audit	29
102-17	Mechanisms for advice and concerns about ethics	Legal Compliance and Internal Control and Internal Audit	29
102-18*	Governance structure	Management Governance	26
102-19	Delegating authority	Corporate Sustainability Management	12
102-20	Executive-level responsibility for economic, environmental, and social topics	Corporate Sustainability Management	12
102-21	Consulting stakeholders on economic, environmental, and social topics	Corporate Sustainability Management	12
102-22	Composition of the highest governance body and its committees	Management Governance	26
102-23	Chair of the highest governance body	Management Governance	26
102-24	Nominating and selecting the highest governance body	Management Governance	26
102-25	Conflict of Interest	Management Governance	26
102-26	Role of highest governance body in setting purpose, values, and strategy	Corporate Sustainability Management	12
102-27	Collective knowledge of highest governance body	Management Governance	26
102-28	Evaluating the highest governance body's performance	Management Governance	26
102-29	Identifying and managing economic, environmental, and social impacts	Corporate Sustainability Management	12
102-30	Effectiveness of risk management process	Corporate Sustainability Management	12



Disclosure Item	Description	Corresponding Chapters	Page No.
102-31	Review of economic, environmental, and social topics	Corporate Sustainability Management	12
102-32	Highest governance body's role in sustainability reporting	Corporate Sustainability Management	12
102-33	Communicating critical concerns	Corporate Sustainability Management	12
102-34	Nature and total number of critical concerns	Corporate Sustainability Management	12
102-35	Remuneration policies	Management Governance	26
102-36	Process for determining remuneration	Management Governance, Talent Composition and Compensations	26 74
102-37	Stakeholders' involvement in remuneration	Management Governance	26
102-38	Annual total compensation ratio	Talent Composition and Compensations	74
102-39	Annual total compensation ratio	Talent Composition and Compensations	74
102-40*	List of stakeholder groups	Materiality Analysis	74
102-41*	Collective bargaining agreements	Not signed	-
102-42*	Identifying and selecting stakeholders	Materiality Analysis	14
102-43*	Approach to stakeholder engagement	Materiality Analysis	14
102-44*	Key topics and concerns raised	Materiality Analysis	14
102-45*	Entities included in the consolidated financial statements	Management Performance and Industry Outlook	34
102-46*	Defining report content and topic boundary	About This Report	108

Disclosure Item	Description	Corresponding Chapters	Page No.
102-47*	List of material topics	Materiality Analysis	14
102-48*	Restatements of information	No restatements	-
102-49*	Changes in reporting	No significant changes	108
102-50*	Reporting period	About This Report	108
102-51*	Date of the most recent report	About This Report	108
102-52*	Reporting cycle	About This Report	108
102-53*	Contact point for questions regarding this report	About This Report	108
102-54*	Claims of reporting in accordance with the GRI Standards	About This Report	108
102-55*	GRI Content Index	GRI Standards Index Comparison Table	109
102-56*	External assurance	Independent Assurance Opinion Statement	116

Note : * Core options

GRI 103 : Management Approach			
103-1	Explanation of the material topic and its boundary	Materiality Analysis	14
103-2	The management approach and its components	Materiality Analysis	14
103-3	Evaluation of the management approach	Materiality Analysis	14



Series	Disclosure Item	Description	Corresponding Chapters	Page No.
GRI 200 : Economic Series				
GRI 201 Economic performance	201-1	Direct economic value generated and distributed(EVG&D) on an accruals basis	Management Performance and Industry Outlook	34
	201-2	Financial implications and other risks and opportunities due to climate change	Response to Climate Change	62
	201-3	Defined benefit plan obligations and other retirement plans	Talent Composition and Compensations	74
GRI 203 Indirect economic impacts	203-1	Infrastructure investments and services supported	Participation in Public Infrastructure	70
	203-2	Significant indirect economic impacts	Social Co-Prosperity	96
GRI 206 Anti-Competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Legal Compliance and Internal Control and Internal Audit	29
GRI 300 : Environmental Series				
GRI 301 Materials	301-1	Materials used by weight or volum	Incineration Plant Pollutant Management	51
	301-2	Renewable materials used	Incineration Plant Pollutant Management	51
GRI 302 Energy	302-1	Energy consumption within the organization	Cogeneration and Sales of Electricity	52
	302-4	Reduction of energy consumption	Energy and Resource Conservation	67

Series	Disclosure Item	Description	Corresponding Chapters	Page No.
GRI 302 Energy	302-5	Reductions in the energy requirements of products and services	Energy and Resource Conservation	67
GRI 307 Environmental Compliance	307-1	Non-compliance with environmental laws and regulations	Legal Compliance and Whistleblowing Mechanism	29
GRI 400 : Social Series				
GRI 402 Labor / Management Relations	402-1	Minimum notice periods regarding operational changes	Human Rights Protection and Welfare	77
GRI 405 Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	Talent Composition and Compensations	74
	405-2	Ratio of basic salary and remuneration of women to men	Talent Composition and Compensations	74
GRI 408 Child labor	408-1	Operations and suppliers at significant risk for incidents of child labor	Human Rights Protection and Welfare, Sustainable supply chain management	77 40
GRI 415 Public Policy	415-1	Political contributions	The Company is politically neutral and has no political donation	-
GRI 417 Marketing and Labeling	417-2	Incidents of non-compliance concerning product and service information and labeling	No such events occurred in 2021	-
GRI 418 Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Risk Management	31
GRI419 Socioeconomic Compliance	419-1	on-compliance with laws and regulations in the social and economic area	Workplace Disaster Prevention	88

Note : * The 2016 version is adopted for all the above provisions, except for GRI 3030 and 403 series which adopt the 2018 version



Sustainability Accounting Standards Board (SASB) Comparison Table

Topic	Code	Measuring Unit	Accounting Metric	Chapters	Page No.
GHG	IF-WM-110a.1	Metric tons (t) CO2e ; %	Under emissions-limiting regulations and emissions-reporting regulations : gross Scope 1 emissions,percentage covered	Cogeneration and Sales of Electricity	52
	IF-WM-110a.2	Million British Thermal Units (MMBtu) ; %	1. Total landfill gas generated 2. percentage flared 3. percentage used for energy	All the waste collected and transported by ECOVE is treated by incineration, and there was no landfill gas generated	-
	IF-WM-110a.3	N/A	Discussion of long-term and short-term strategy or plan to manage Scope 1 and lifecycle emissions, emissions reduction targets, and an analysis of performance against those targets	ECOVE has no control over the source of waste collected and transported. Hence no reduction target was set	-
Fleet Fuel Management	IF-WM-110b.1	Gigajoules (GJ) ;%	1. Fleet fuel consumed 2. percentage natural gas 3. percentage renewable	Energy and Resource Conservation	67
	IF-WM-110b.2	%	Percentage of alternative fuel vehicles in fleet	There were no vehicles using alternative fuels	-
Air Quality	IF-WM-120a.1	Metric tons (t)	Air emissions of the following pollutants : 1.NOx(excluding N2O) 2.SOx 3.VOCs 4.HAPs	Incineration Plant Pollutant Management	51
	IF-WM-120a.2	Number	Number of facilities in or near areas of dense population	Incineration Plant Pollutant Management	51
	IF-WM-120a.3	Number	Number of incidents of non-compliance associated with air emissions	Legal Compliance and Whistleblowing Mechanism	29
Management of Leachate & Hazardous Waste	IF-WM-150a.1	Metric tons (t) ; %	1.Total Toxic Release Inventory (TRI) releases ; 2 percentage released to water		
	IF-WM-150a.2	Number	Number of corrective actions implemented for landfill releases	All waste collected and transported by ECOVE was treated by incineration and was not buried. Hence, no relevant situation	-
	IF-WM-150a.3	Number	Number of incidents of non-compliance associated with environmental impacts		
Labor Practices	IF-WM-310a.1	%	Percentage of active workforce covered under collective bargaining agreements	No collective agreements have been signed	-
	IF-WM-310a.2	Number ; Number of days	Number;Days idle	Human Rights Protection and Welfare	77



Topic	Code	Measuring Unit	Accounting Metric	Chapters	Page No.
Workforce Health & Safety	IF-WM-320a.1	Rate	For direct employees and contract employees : 1. total recordable incident rate (TRIR) 2. fatality rate 3. near miss frequency rate (NMFR)	Occupational Disaster Prevention	88
	IF-WM-320a.2	%	Safety Measurement System BASIC percentiles for : 1. Unsafe Driving ;2. Hours-of-Service Compliance ;3. Driver Fitness ;4. Controlled Substances/Alcohol ;5. Vehicle Maintenance ;6. Hazardous Materials Compliance	Policies and Committees	84
	IF-WM-320a.3	Number	Number of road accidents and incidents	There was no traffic accident in 2021 for the cleaning and delivery fleet of ECOVE Waste Management Corp	-
Recycling & Resource Recovery	IF-WM-420a.1	Metric tons (t) ; %	1. Amount of waste incinerated 2. percentage hazardous 3. percentage used forenergy recovery	Waste Management Capacity	50
	IF-WM-420a.2	%	Customer type by : 1. percentage of customers receiving recycling services 2. percentage of customers receiving composting services	As ECOVE's operations is predominantly in the incineration of general waste, there was no activity of hazardous materials and energy recovery	-
	IF-WM-420a.3	Metric tons (t)	Amount of material : 1. recycled ; 2. composted ; 3. processed as waste-to-energy	N/A	-
	IF-WM-420a.4	Metric tons (t) ; %	Amount of electronic waste collected, percentage recovered through recycling	Cogeneration and Sales of Electricity	52
				No involvement in electronic waste recovery	-

Topic	Code	Measuring Unit	Accounting Metric	Chapters	Page No.
Activity Metrics	IF-WM-000.A	Number	Number of customers by category : 1. municipal ; 2. commercial ; 3. industrial ; 4.residential ; 5. other	Due to the business nature of ECOVE, the customer category was not distinguished	-
	IF-WM-000.B	Number	Vehicle fleet size	Energy and Resource Conservation	67
	IF-WM-000.C	Number	Number of : 1.landfills ; 2.transferstations ; 3. recyclingcenters ; 4.compostingcenters ; 5.incinerators ; 6. all other facilities	G.D. Development Corporation owns 95 solar power plants; in 2021, ECOVE Environment Corp. was responsible for the operation of 8 incinerators	-
	IF-WM-000.D	Metric tons (t)	Total amount of materials managed, by customer category : 1. municipal ; 2. commercial ; 3. industrial ; 4. residential ; 5. other	Due to the business nature of ECOVE, the customer category was not distinguished	-



Independent Assurance Opinion Statement



保證聲明書

台灣檢驗科技股份有限公司針對崑崙投資控股股份有限公司於2021年永續報告書永續活動報導之保證聲明書

保證/查證性質與範圍

台灣檢驗科技股份有限公司(以下簡稱SGS)受崑崙投資控股股份有限公司(以下簡稱崑崙)委託執行2021年永續報告書之獨立保證。依據SGS永續報告書保證之方法學,其保證範圍係包括報告書中所涵蓋的文本與圖表之數據,根據SGS永續發展報告保證方法論,保證的範圍包括抽樣文本內容和相關附表中的數據,這些數據包含在現場查證期間所提交的報告中。SGS保留不時更新保證聲明的權利,具體取決於發布版本的報告內容與協議標準要求之間差異的程度。

保證聲明書之預期使用者

本保證聲明書係以崑崙之所有利害關係人為主要溝通對象。

責任

有關崑崙之2021年永續報告書中之資訊以及所呈現之內容皆屬於崑崙之永續發展管理人員、企業社會責任委員會及永續發展管理部門的責任。SGS台灣未參與任何有關崑崙之2021年報告書中所包含內容的準備工作。

我們的責任是對崑崙的所有利害關係者對於所設定查證範圍內所發表的文字、數據、圖表及聲明提供意見。

保證標準、類型與等級

SGS用於執行保證工作引用之ESG暨永續報告書保證規則係依據國際認可之保證指引-全球報告倡議組織(GRI)永續性報導標準101:基礎 2016之報告品質要求及相關當責性標準於各保證等級及保證方針行原則之相關指南所釐定。

本報告依據SGS集團發展之永續報告書保證規則針對以下所述予以保證:

保證標準項目與保證等級	
A	SGS ESG 暨永續報告書保證規則 (以 GRI 原則及 AA1000 指南為基礎)
B	AA1000AS v3 第二類型高度保證等級 (AA1000 當責性原則及特定績效資訊評估)

保證及報告要求範疇

保證工作範疇包括評估特定績效資訊的報告品質、準確性及可靠性,此評估依循之報告準則如下:

合約協議之特定報告準則

報告準則項目	
1	GRI 準則 (全面選項)
2	AA1000 當責性原則 (2018)

- 高度評估本報告書所揭露之崑崙重大永續績效資訊內容及中度評估所適用之組織外邊界資訊內容的真實性;
- 以AA1000保證標準v3版 第二類型之要求評估報告書內容及其配套管理系統對應AA1000當責性原則(2018)之符合程度;及
- 評估報告書於GRI內容索引中宣告其所依循之重大主題及其對應之GRI永續性報導準則(100, 200, 300及400 系列)符合程度

保證方法

本報告書保證包含保證活動前的背景研究,崑崙位於台灣之營運據點與本保證活動相關之員工及資深管理階層的訪談、文件和紀錄的審查以及與本保證活動相關之外部機構和/或利害關係者的確證,報告中所引用之財務資訊若已經由獨立之會計稽核,在報告書保證過程中將不會追溯其原始資料。

使用限制及措施

報告中所引用已經獨立會計稽核之財務資訊,及所提及之 Task Force on Climate-related Financial Disclosures (TCFD), SASB 等內容,在報告書保證過程中將不會追溯其原始資料或對其符合程度提供意見。

獨立性及資格聲明

SGS 集團在檢驗、測試和驗證的領域在世界上具有領先的地位,我們在超過 140 個國家營運和提供服務,服務項目包括管理系統和服務驗證、品質、環境、社會和道德的稽核和訓練以及環境報告書保證、社會報告書保證和永續報告書保證。SGS 台灣申明我們對於崑崙、其子公司和利害關係者的獨立性上沒有任何的偏見和利益衝突。

保證團隊之組成係根據成員的知識、經驗以及能力資格加以遴派,且由具備品質管理系統、環境管理系統、安全衛生管理系統、能源管理系統、有害物質管理系統、社會責任管理系統、溫室氣體查證之註冊主事稽核員/查證員資格及符合SGS永續報告書保證服務資格的人員所組成。

查證/保證意見

依據所述之方法學以及所完成之查證工作,保證團隊對於保證工作範疇內與重大主題相關的特定績效資訊具準確性及可靠性感到滿意,並且認為其已依循報告準則要求公允報導。

保證團隊認為報告組織已為此報告書選擇適當程度之保證等級。

AA1000當責性原則 (2018) 結論、發現事項及建議

包容性

崑崙對於利害關係者的包容性已透過組織內最高治理單位提供正式的承諾,透過調查等方式對員工、客戶、投資人、供應商、社區及媒體等利害關係者進行溝通,因而使組織能夠瞭解利害關係者所關切的議題。

重大性

崑崙已建立並實施有效的流程來確認組織的重大性議題,有系統地鑑別並適當考量利害關係者意見及企業的永續背景,包括來自於利害關係者的需求與期望、社會期待、及既有政策等,以評估經濟、環境、社會的顯著衝擊及影響利害關係者的評估和決策程度,建議可使用適當的標準和閾值來決定所鑑別重大議題的顯著性、可能性,以及對於當前和可預期未來的衝擊程度。

回應性

崑崙已於本報告適切地涵蓋了利害關係者議和的結果以及其回饋的管道,建議以持續和即時的方式與利害關係者進行溝通,以提供合理和可行的回應。

衝擊性

崑崙已透過流程化鑑別並管理組織內的相關衝擊,並由治理單位及資深管理階層監督,未來可考量定義方法學將衝擊程度呈現為定量或貨幣化的測量結果。

全球報告倡議組織(GRI)永續性報導準則結論、發現事項及建議

崑崙之2021年永續報告書適切地符合GRI永續性報導準則全面依循選項的要求,其重大議題及影響之內外邊界已適當地依循GRI定義報告書內容的報導原則完成鑑別,重大主題及邊界的鑑別、利害關係者適合等GRI 102-40至GRI 102-47的相關揭露項目,已正確於內容索引及報告書中列示,對於未來的報告,建議對於GRI準則未涵蓋的自訂重大主題管之理方針的有效性評估機制和結果進行更多描述。

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日期: 2022年04月22日
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