

2019

ECOVE Environment Corporation

Corporate Sustainability Report



Every Resource Counts

ECOVE

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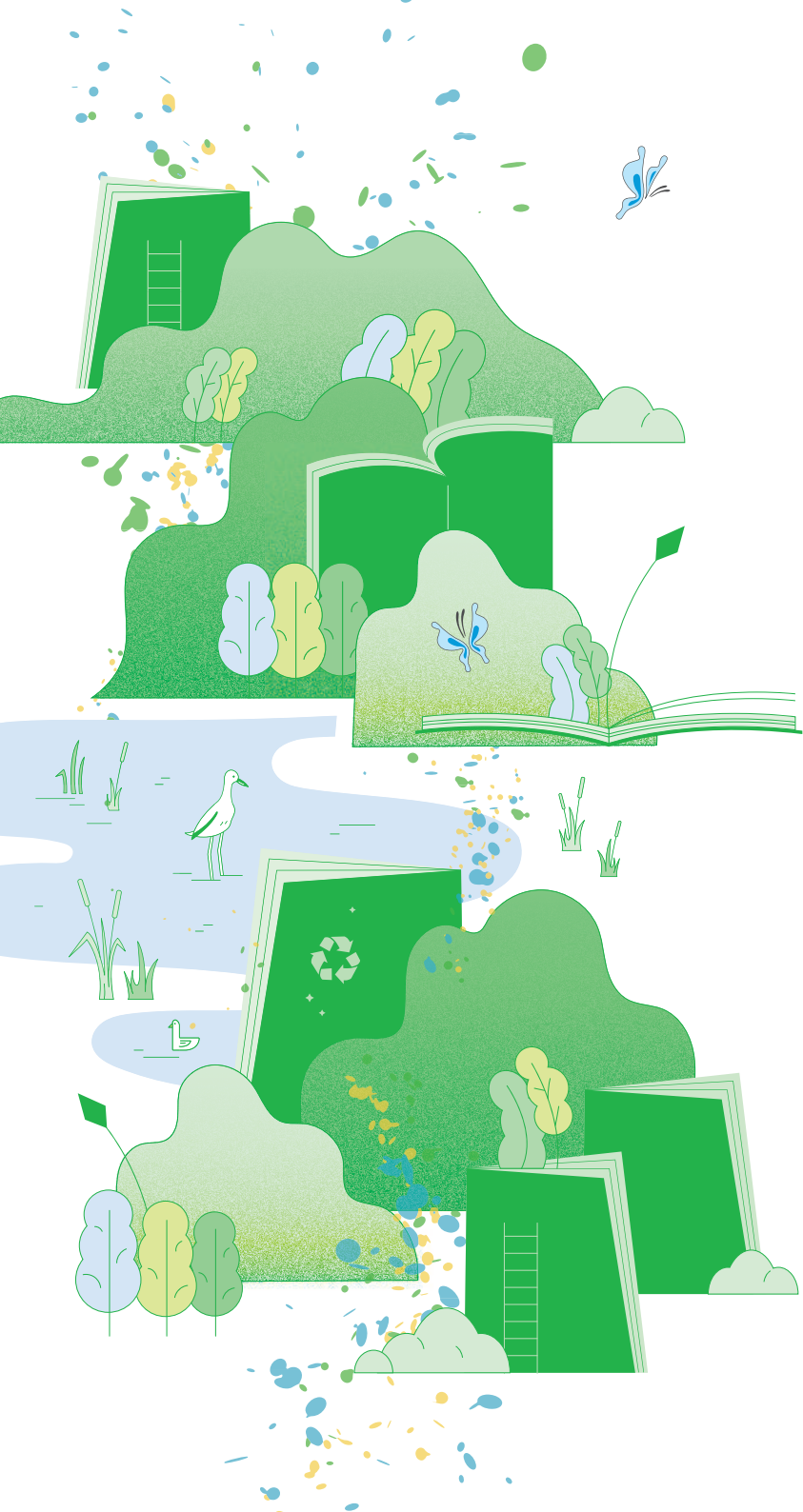
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## Messages from Chairman

### CSR, enabling us to go further and further

#### We made all-out efforts to achieve outstanding CSR performance

Having cultivated the Taiwanese market for many years, ECOVE Environment Corp. has always held true to our mission to innovate, and to provide optimized 'resource cycling' efficiency™ services through advanced technical integrations. Moreover, the Company is always dedicated to developments in the Taiwanese society and to fulfill our promise to become "the most reliable" brand in practice.

In 2019, the following achievements ensued from our continuous focus on environment, social, and governance (ESG) practices:

- Consolidated revenue: NT\$5.3 billion; profit after tax: NT\$0.8 billion
- Earnings per share: NT\$10 for eight years in a row
- Top 5% in the Financial Supervisory Commission's Corporate Governance Evaluation for six consecutive years
- Excellence Award in the 1st National Corporate Environment Protection Award organized by the Executive Yuan

- No.1 in SME Group in the Excellence in Corporate Social Responsibility Award from CommonWealth Magazine
- Top 50 in Corporate Comprehensive Performance, Platinum Award in Corporate Sustainability Report, Transparency and Integrity Awards, and Circular Economy Leadership Award in the Taiwan Corporate Sustainability Awards for three consecutive years

#### We forged ahead with accountability to promote a next leap

ECOVE is a brand consisting of a professional team that values safety and quality, has expertise in waste management and incineration, renewable energy, and recycling, and pursues innovations and best customer service with passion. Aiming to become the most reliable provider of industry-leading "resource cycling" services, ECOVE communicates with customers at home and abroad and identifies their needs and further provides tailor-made services based on the customer-first business philosophy. All employees of ECOVE make me proud as they have made relentless efforts to maintain the most reliable, quality service.

In 2019, we continued our business Operations and Management in line with the sustainability roadmap

built on 17 United Nations' SDGs, along with our core competencies, brand associations, and corporate responsibilities in hopes of solving social and environmental issues through the performance of business activities; at the same time, we paid attention to the environment and cared for society during business Operations and Management, making all-out efforts to fulfill CSR through linking business and lifelong career goals. We shouldered responsibility for taking care of society and the environment and creating sustainable value for both the Company and our stakeholders.

#### We deepen our demand-oriented intelligentization

For a long time, ECOVE, in the industry of resource cycling, has always been a reliable provider of technology and services, and it is a leader for technology integration. We provide our clients with integrated services from upstream, mid-stream, and downstream, helping them various problems in waste treatment, recycling, and renewable energy, and helping them quickly upgrade equipment and optimize their resource cycling.

To realize our sustainability roadmap, ECOVE is also preparing for the new global industry revolution in

the technical applications of artificial intelligence (AI) and the Internet of Things (IoT). We believe that we may only come out successful in this revolution and to contribute toward the society by possessing a long- term vision of understanding the future and by executing accurate strategies on such basis.

### We shoulder responsibility amid the COVID-19 pandemic

ECOVE is responsible for disposing of 30% of total waste (waste entering 24 incineration plants) in Taiwan, which is equivalent to serving more than 3.7 million people. In addition, all the waste in Macao is also disposed of by us. This is an outstanding achievement and a huge responsibility, especially amid the COVID-19 pandemic. Despite the stay-at- home order, disposal of garbage must continue to prevent domestic waste from exacerbating the epidemic. We have already prepared for disposal of waste during the pandemic and also made arrangements for public construction work such as solar photovoltaic systems, waste water treatment, rail transportation, healthcare, etc., to keep public service uninterrupted. We think highly of such responsibility and take great pride in what we do.

While providing such public service, we also take our employees' health and safety seriously. In addition

to distributing masks and alcohol, we prepare the epidemic prevention package for our field staff. We are deeply convinced that keeping all employees healthy and vital at work is the foundation of corporate sustainability; therefore, several measures are taken to protect our employees' safety and health at the workplace such as taking body temperature, making work-from-home arrangements, and initiating the business continuity plan (BCP).

2019 was a year of abundance. Looking into 2020, ECOVE will continue to hold true to our visions of enhancing 'resource cycling' efficiency<sup>TM</sup>, utilizing intelligent data-driven operational systems, actively

participating in national agenda and policies, and community collaboration and contributions. We will be committed to social welfare, to promoting environmental education, and to enhancing the environmental protection awareness throughout communities, thus creating a win-win situation for the industry, the environment, and society.



**J.J.Liao**  
**ECOVE Environment Corp. / Chairman**





# About ECOVE

ECOVE Environment Corp. (hereinafter referred to as "ECOVE" or the Company) is a subsidiary of CTCI, a global engineering services provider. Striving to improve the reuse of resources, ECOVE provides professional investment and management services for industries related to resource cycling. We are focused on developing and managing circular economies including renewable energy, renewable substances, and renewable water resources, and we are committed to cultivating three major businesses, including waste management and energy from waste (EfW), recycling, and renewable energy.

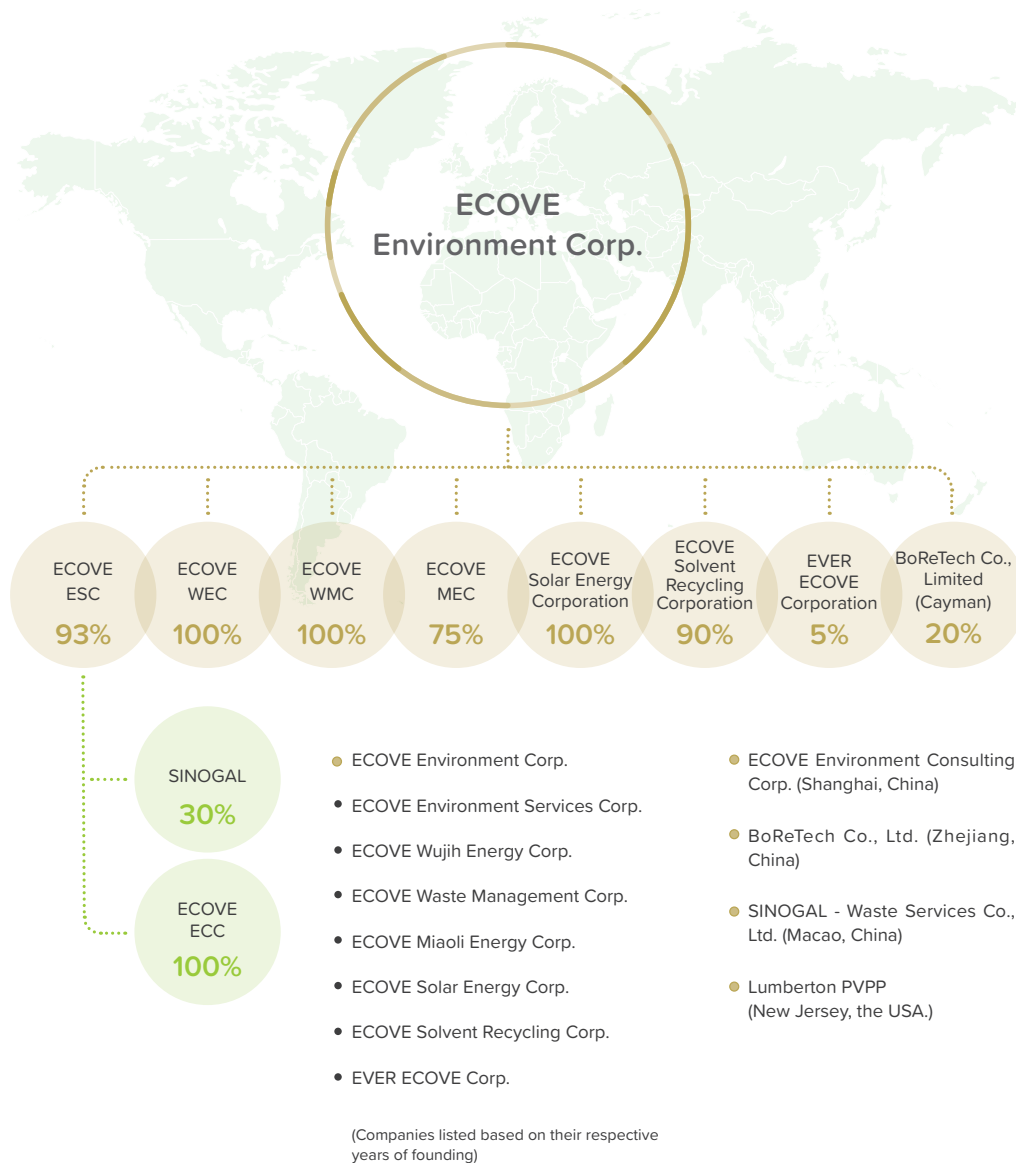
Ecove Environment Corp.	Founded in 1999
Stock Code	6803
Capital	NT\$670 million
2019 Consolidated Revenue	NT\$5.3 billion
Number of Affiliates	10 (7 domestic and 3 foreign)
Number of Employees as of 2019	815
Location of Headquarters	10F., No. 89, Sec. 6, Zhongshan N. Rd., Shilin Dist., Taipei City
Company Website	<a href="http://www.ecove.com">http://www.ecove.com</a>

Our scope of business includes investment and management, Operations and Management, and technical and consulting services. Our clients include the public sectors and private enterprises from the Greater China region, Southeast Asia, India, and the United States. We have 10 reinvestments, which play their respective supportive roles throughout the developments of circular economy services and together construe a professional circular economy team, providing comprehensive, professional environmental protection services in Taiwan, Macao, China, Southeast Asia, India, and the United States.

## Scope of Business and Services

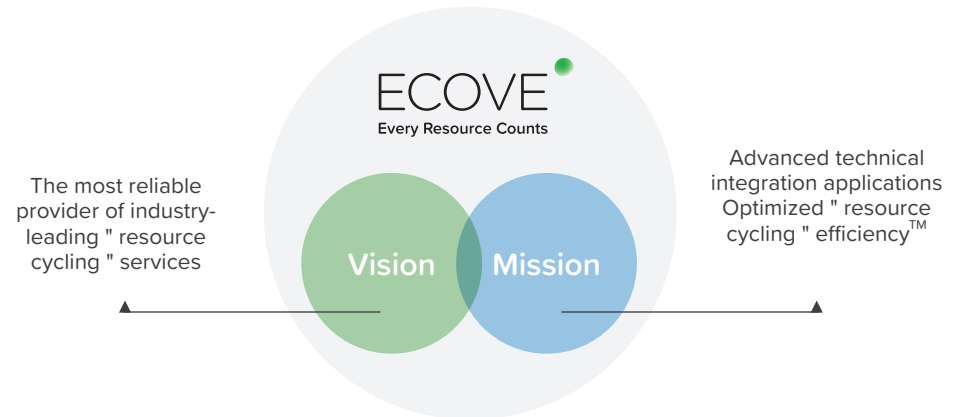


## Company Structure and Global Subsidiaries



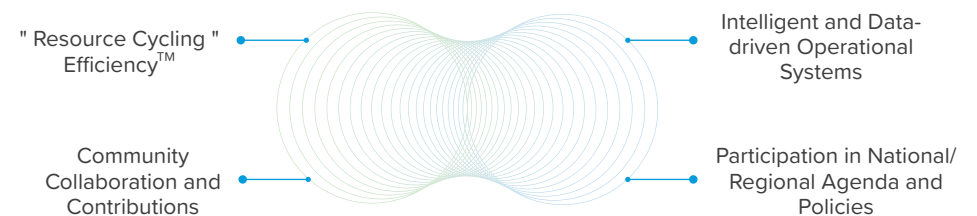
## Our Vision and Mission

As a practitioner of resource cycling, ECOVE's vision is to become the most reliable provider of industry-leading 'resource cycling' services. We see "advanced technical integration applications" and "optimized 'resource cycling' efficiency™" as our missions and our brand slogan "Every Resource Counts" as our operational model and mind-set.

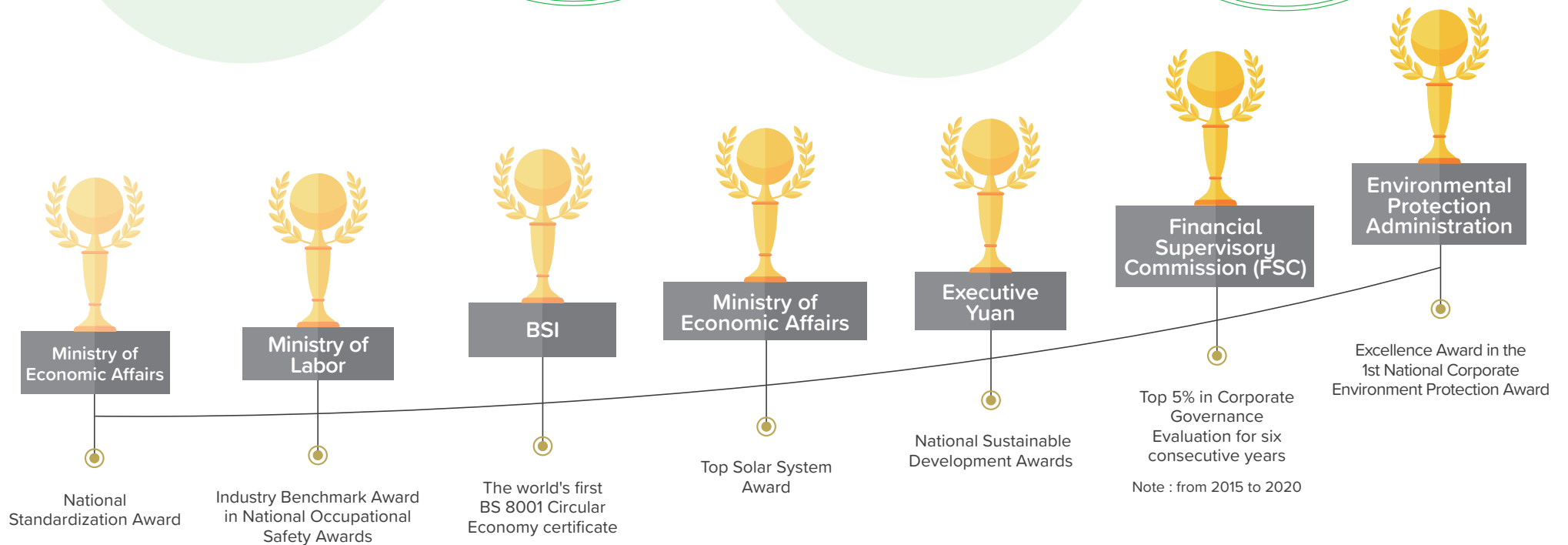
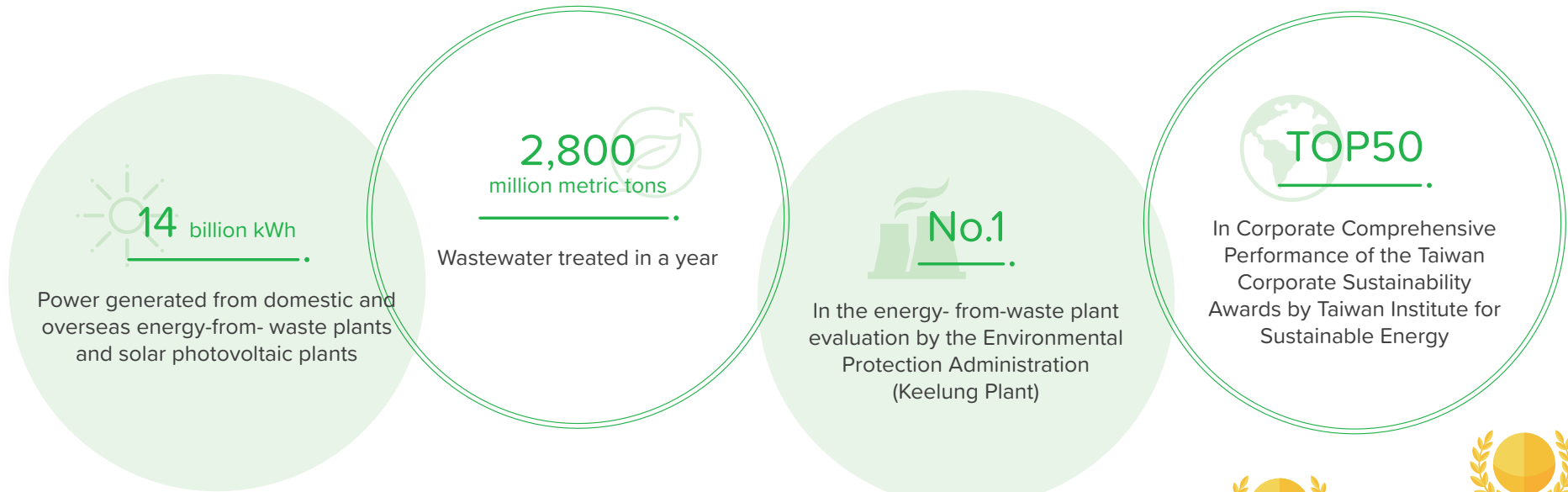


ECOVE obtained the world's first BS 8001 Circular Economy certificate. ECOVE continues to improve "resource cycling" efficiency™ through intelligent and data-driven operational systems, participate in national/regional agenda and policies, and promote community collaboration and contributions. We are committed to incorporating the United Nations' Sustainable Development Goals (SDGs) into our resource cycling-based business model, so as to achieve resource sustainability on this planet and in the human living environment.

## Brand Associations



# Sustainability Performance





## Corporate Culture and Action Plan





# Most reliable

## Early Preparations for the COVID-19 Pandemic

The COVID-19 pandemic has spread around the world since December 2019. Taiwan is no exception. Having insight into crisis management and solid emergency response measures in day-to-day Operations and Management, ECOVE set up the global epidemic prevention command center in January 2020 to fight against the COVID-19 pandemic. We have established the epidemic prevention organization and task forces and set up an epidemic prevention platform to keep abreast of the developments of the epidemic. We have also distributed the COVID-19 Prevention Plan to each of our operating site and formulated relevant guidelines and standard operating procedures in the following three aspects: epidemic prevention grading and countermeasures, epidemic prevention and management for the environment, epidemic prevention and management for employees.

Epidemic Prevention Grading and Countermeasures



Epidemic Prevention and Management for the Environment



Three Aspects of Epidemic Prevention



Epidemic Prevention and Management for Employees

ECOVE takes concrete actions in the pandemic, preventing operations from being disrupted, and protecting staff's health.



ECOVE has the epidemic prevention platform set up to provide the latest epidemic information for all employees



Increase the spacing of office seats and add partitions



Plan a rest area for contractors to manage the flow of people



Set up a document/article exchange area to avoid contact

In terms of epidemic prevention grading and countermeasures, we develop a business continuity plan (BCP), which covers compartmental office space, split operation, and work from home arrangements, and arrange for walk-through. Regarding epidemic prevention and management for the environment, we rearrange office and activity spaces, distribute alcohol, and disinfect operating sites on a regular basis. As to epidemic prevention and management for employees, ECOVE distributes masks to all employees and epidemic prevention kits to expatriates and manages attendance and health via mobile APP. All of these epidemic prevention measures are evidence that ECOVE is one of the earliest companies to make early preparations. We take action against



— Distribute masks and epidemic prevention kits to take care of employees' health



— Relocate indoors morning meetings to an open and ventilated place and keep a social distance of one meter

— Manage work-from-home attendance via mobile APP

— Organize online meetings to show results of the work simultaneously



# Corporate Governance



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



## Performance Highlight

<p><b>TOP 50%</b></p> <p>Top 5% in the Financial Supervisory Commission's 6th Corporate Governance Evaluation</p>	<p><b>Excellence Award</b></p> <p>Excellence Award in the 1st National Corporate Environment Protection Award organized by the Executive Yuan</p>	<p><b>Excellence</b></p> <p>Excellence in the energy-from-waste plant evaluation by the Environmental Protection Administration</p>	<p><b>Corporate Sustainability Report Award &amp; Transparency and Integrity Award</b></p> <p>Top 50 in Corporate Comprehensive Performance, Platinum Award in Corporate Sustainability Report, and Transparency and Integrity Awards in the Taiwan Corporate Sustainability Awards by Taiwan Institute for Sustainable Energy</p>	<p><b>TWNSI Constituent</b></p> <p>Constituent of Taiwan Sustainability Index (TWNSI)</p>	<p><b>CTCI Foundation Technology Contribution Award</b></p> <p>CTCI Foundation Technology Contribution Award to ECOVE's electronic waste treatment technology team</p>
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# Sustainability Management

ECOVE is committed to fulfilling corporate social responsibility with its business strength. We keep abreast of domestic and overseas trends in sustainable development while responding to the UN Sustainable Development Goals (SDGs) on our own initiative. While maintaining the steady growth of business Operations and Management, ECOVE ensures the CSR practices through a sound sustainability management structure; by listening to and cooperating with our stakeholders, we create sustainable value and fulfill corporate citizenship with our business strength.

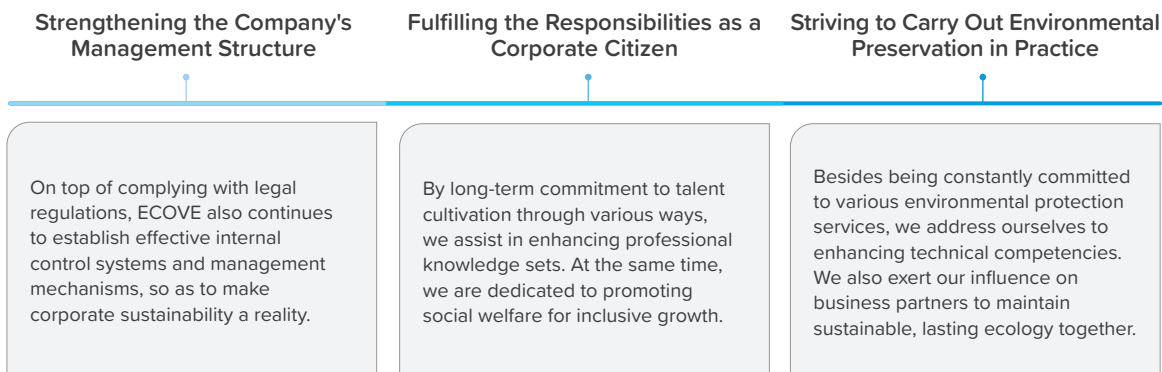
## CSR Policy and Management Structure

102-19~21    102-26    102-30~34

### CSR 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 and Management. In addition to pursuing the best interests for shareholders, ECOVE takes the rights and interests of other stakeholders into account in hopes of building a sustainable, wonderful living environment together with all stakeholders. To build a sound sustainability management structure, ECOVE has sustainable development strategies that cover environmental, social, and governance (ESG) criteria in place to stay committed to the following three goals: strengthening the Company's management structure, fulfilling the responsibilities as a corporate citizen, and striving to carry out environmental preservation in practice.

### Sustainable Development Strategies



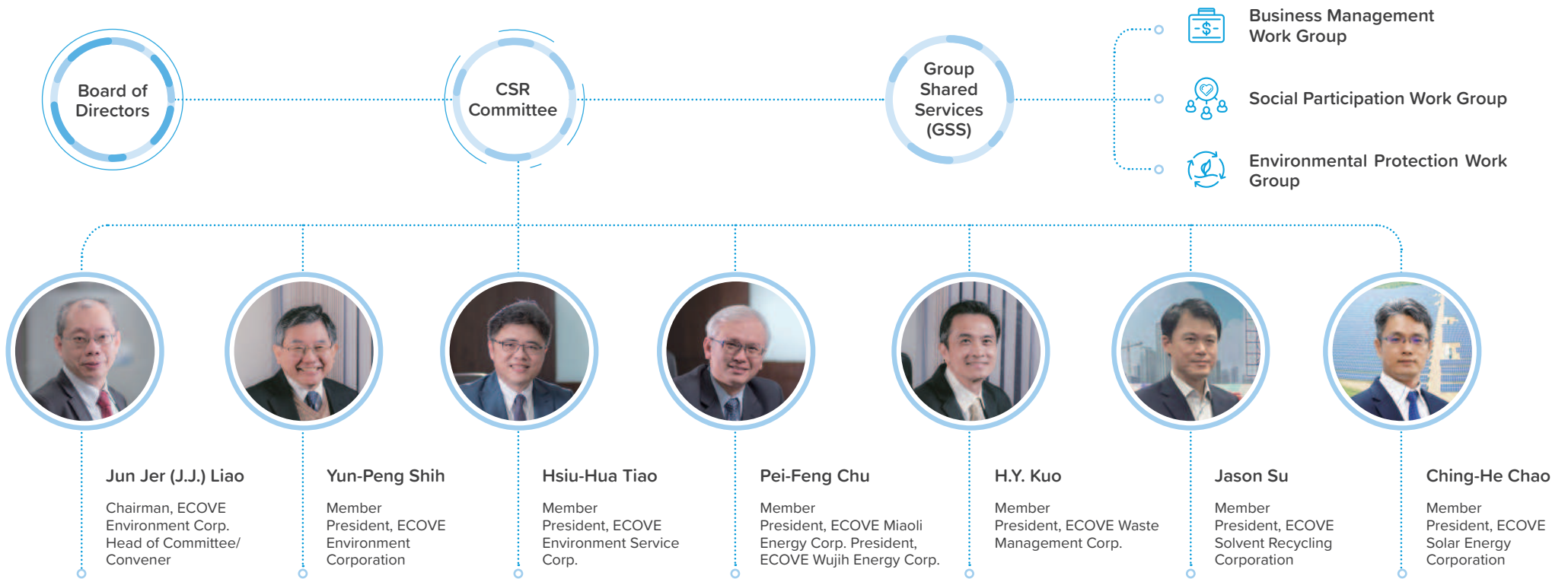
To further strengthen the philosophy of corporate sustainability, the "ECOVE Corporate Social Responsibility Best Practice Principles" were established as the basis of addressing ESG issues in course of pursuing sustainable development and profitability.

### Four Pillars of ECOVE Corporate Social Responsibility Best Practice Principles





## Organizational Structure of CSR Committee



## CSR Management Structure

Established in 2014, the CSR Committee is the main decision-making and promotion unit of ECOVE's corporate social responsibility practices. Group Shared Services is responsible for coordinating the work groups under the Committee and convening work group meetings to keep track of the results.

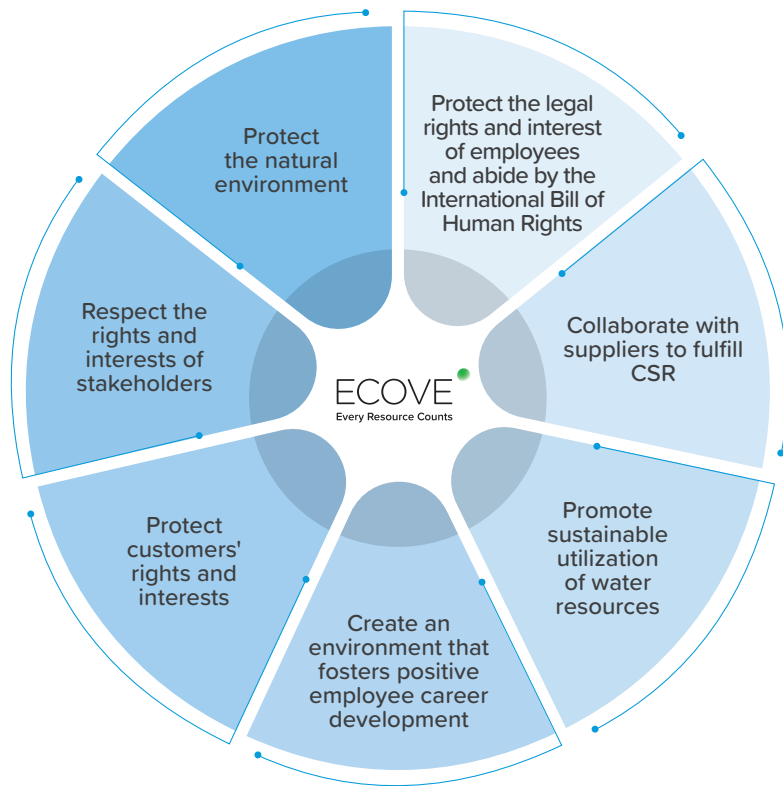
The Chairman of the Company serves as the Chairman of the Committee and the highest-ranking executives as the members of the Committee. The CSR Committee meets regularly each year or as needed. The regular meeting is held in the fourth quarter of each year to

review the CSR activities of the current year and to discuss major CSR topics for the next year. Meetings are also held as needed. To fully execute sustainable development activities, three work groups were set up under the Committee for Business Management, Social Participation, and Environmental Protection, and the groups were formed by personnel from related departments.

In addition, the Committee reports the effectiveness of CSR-related activities to the Board of Directors regularly in the fourth quarter of each year. The

effectiveness of CSR-related activities in 2019 and future action plans have been reported to the Board of Directors. The Committee will carry out CSR-related activities as planned; in addition, it has resolved to link the sustainability performance and executives' key performance indicators (KPIs) in 2020 to follow out the spirit of sustainable development. KPIs include leadership (e.g., publications), innovation (e.g., digitization or patent applications), positive caring (e.g., volunteer hours), and brand elevation (e.g., awards).

## Priorities of ECOVE Corporate Social Responsibility Best Practice Principles



## Materiality Analysis

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

To identify the degree of stakeholders' concern and the impact on Operations and Management with regard to sustainability issues, we conduct the materiality analysis through participation and discussions from the CSR Committee in line with the GRI Standards and AA 1000 SES. In 2019, we identified 21 sustainable issues related to our Operations and Management by encompassing international standards and principles such as the GRI Standards and its Electric Utilities Sector Disclosures, the United Nations Global Compact (UNGC), International Labour Organization Conventions and Recommendations (ILO), and Sustainable Development Goals (SDGs), while referencing global competitors, contents of communication with stakeholders, and issues recommended by external institutions.

### Identification

6<sup>major</sup>  
stakeholders

21  
sustainability issues

- Major stakeholders were identified through five principles of the AA 1000 SES:2015.
- Sustainability issues related to business Operations and Management were identified by referencing global competitors, contents of communication with stakeholders, and issues recommended by external institutions.

### Analysis

445  
questionnaires

15<sup>reporting</sup>  
team members

- The work groups under the CSR Committee considered the impacts of sustainability issues on business Operations and Management based on the six major evaluation items, namely revenue, cost, technical competencies, brand reputation, cohesion among employees, and social influence.
- Questionnaires were disseminated to research the degree of external stakeholders' concern for the sustainability issues. According to the impacts on Operations and Management and degree of external stakeholders' concern, eight material issues were determined, along with short-term, medium-term, and long-term goals and management strategies, after discussions among the CSR team members and reporting to the Chairman.

### Validation

8<sup>material</sup>  
topics

- Based on the eight material issues selected, the work groups under the CSR Committee would determine their respective corresponding material topics, in which five GRI topics and other three topics specific to ECOVE's industry characteristics were selected, making for a total of eight material topics.
- Since material issues could occur in entities within the organization (ECOVE and other subsidiaries) or in the value chain outside the organization (upper, middle, and downstream entities), the eight material topics selected were individually evaluated by members of the CSR teams, so as to determine the boundaries of information disclosure for this Report.

## Stakeholder Communication and Feedback

By communicating with stakeholders through diversified mechanisms and listening to their recommendations, we understand our stakeholders' aspirations and concerns, which serves as the driving force behind our improvements and enhancements. In 2019, we evaluated the levels of influence from stakeholders on our business Operations and Management based on the five major principles

of the quantitative methods under AccountAbility 1000 Stakeholder Engagement Standard:2015 (AA 1000 SES:2015), namely, Dependency, Responsibility, Influence, Tension, and Diverse Perspective. Finally, our CSR team members collectively identified a total of six major stakeholders: employees, shareholders, communities, suppliers, customers, and government.

Stakeholders	Significance	Topic of Concern	Focus of Concern	Response	Method / Frequency of Communication	Results of Communication	Corresponding Chapter/Section
Employees	Conscientious employees are ECOVE's greatest assets	<ul style="list-style-type: none"> <li>Employee benefits and compensations</li> <li>Talent retention and recruitment</li> </ul>	<ul style="list-style-type: none"> <li>Salary adjustment</li> <li>Career development</li> <li>Recruitment</li> </ul>	<ul style="list-style-type: none"> <li>Adjust salaries based on the market standards and competitors' employee benefits</li> <li>Implement talent development plans and customize individual development plans (IDP)</li> <li>Participate in campus recruitment programs, employment pilot schemes for vocational high school students, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust salaries based on the market standards and competitors' employee benefits to ensure competitive salaries</li> <li>Talent retention : Implement talent development plans and customize individual development plans (IDP) for employees with potential and professional skills</li> <li>Talent recruitment: Participate in campus recruitment programs, employment pilot schemes for vocational high school students, etc.</li> </ul>	<ul style="list-style-type: none"> <li><b>Annual increase in wages</b> Annual periodic review</li> <li><b>Annual review</b> IDPs for employees with potential</li> <li><b>Eight sessions</b> Campus recruitment programs in 2019</li> </ul>	Talent Caring
Shareholders/ Investors	Provide fair and transparent information for investors of the Company	<ul style="list-style-type: none"> <li>Corporate governance</li> <li>Financial performance</li> </ul>	<ul style="list-style-type: none"> <li>Dividend policies</li> <li>Potential for growth and profitability</li> </ul>	<ul style="list-style-type: none"> <li>Disclose financial, business and operating information to attract investors</li> </ul>	<ul style="list-style-type: none"> <li>Annual general meeting/ year</li> <li>Investor conference/ quarter</li> <li>Extraordinary shareholders' meetings/as needed</li> <li>Telephone communication/as needed</li> </ul>	<ul style="list-style-type: none"> <li><b>One session</b> Annual general meeting</li> <li><b>Four sessions</b> Investor conferences</li> </ul>	Integrity Management

Stakeholders	Significance	Topic of Concern	Focus of Concern	Response	Method / Frequency of Communication	Results of Communication	Corresponding Chapter/Section
Communities	Promote public participation through environmental education and media channels by coordinating unique features in neighborhoods around our facilities	<ul style="list-style-type: none"> <li>Social Participation</li> </ul>	<ul style="list-style-type: none"> <li>Number of environmental education activities and participants</li> <li>Volunteer hours</li> </ul>	<ul style="list-style-type: none"> <li>Operations and Management- related community activities</li> <li>Long-term community building</li> <li>Friendly corporate volunteering</li> </ul>	<ul style="list-style-type: none"> <li>Community activity/as needed</li> <li>Environmental education activity/as needed</li> <li>Care for the disadvantaged/ as needed</li> <li>Environmental protection/as needed</li> </ul>	<ul style="list-style-type: none"> <li><b>208 sessions</b> Environmental education activities</li> <li><b>10,402 participants</b> Environmental education activities</li> <li><b>4,056hours</b> Employee volunteering hours</li> </ul>	Social Participation
Suppliers/ Subcontractors	Collaborate with material suppliers and partners to innovate, develop and create value	<ul style="list-style-type: none"> <li>Supply chain management</li> <li>Power generation efficiency</li> <li>Occupational safety and health</li> </ul>	<ul style="list-style-type: none"> <li>Ensure quality and delivery of materials</li> <li>Stable, successfully clear out the incinerator bottom ash (IBA), and stabilize chemical substances</li> <li>Occupational safety and health performance</li> </ul>	<ul style="list-style-type: none"> <li>Ensure quality and delivery of materials to maintain the stable Operations and Management of each plant and project</li> <li>Stable, successfully clear out the incinerator bottom ash (IBA), and stabilize chemical substances</li> </ul>	<ul style="list-style-type: none"> <li>Coordination meeting/ month</li> <li>Occupational safety and health coordination meeting</li> <li>Phone, e-mail, or fax/as needed</li> </ul>	<ul style="list-style-type: none"> <li><b>28sessions</b> Supplier communication meetings</li> </ul>	Innovations and Sharing
Customers	ECOVE's current and future sources of revenue	<ul style="list-style-type: none"> <li>Occupational safety and health</li> <li>Service quality</li> </ul>	<ul style="list-style-type: none"> <li>Provide quality services</li> </ul>	<ul style="list-style-type: none"> <li>Organize drills in occupational safety and health mechanisms and service processes</li> <li>Waste scheduling coordination and communication</li> <li>Improve performance with feedback on existing projects</li> </ul>	<ul style="list-style-type: none"> <li>Work meeting/twice every year</li> <li>Public conference or bilateral visit or meeting/ once each quarter or as needed</li> <li>Questionnaire/once every six months</li> </ul>	<ul style="list-style-type: none"> <li><b>Three sessions</b> Occupational safety and health or service process training per customers' concern</li> <li><b>2pieces</b> Customer feedback</li> </ul>	Innovations and Sharing
Government	<ul style="list-style-type: none"> <li>Carry out business in compliance with existing laws</li> <li>Maintain smooth operation and communication</li> </ul>	<ul style="list-style-type: none"> <li>Communication with competent authorities</li> <li>Amendments to policies and laws</li> </ul>	<ul style="list-style-type: none"> <li>Compliance and applicability of laws and regulations</li> <li>Content or direction of the latest amendments to policies and laws</li> </ul>	<ul style="list-style-type: none"> <li>Carry out business in accordance with relevant policies and laws</li> <li>Make improvement within a certain timeline in matters that fail to comply with regulations and inflict penalties in line with regulations</li> </ul>	<ul style="list-style-type: none"> <li>Competent authorities' policy announcement/as needed</li> <li>Directive letter from competent authority, response from the Company or on-site inspection/as needed</li> </ul>	<ul style="list-style-type: none"> <li><b>Continuous enforcement</b> Compliance with laws and regulations</li> <li><b>Continuous improvement</b> Violations (if any)</li> </ul>	Integrity Management



Material Issue	Materiality in Operation						GRI Material Topic	Corresponding Chapter/Section	Value Chain														
	Revenue	Cost	Technical Competencies	Brand Reputation	Cohesion among Employees	Social Influence			Inside the Organization					Outside of the Organization									
									ECOVE	Subsidiary				Upstream	Midstream	Downstream							
										ECOVE WMC	ECOVE WEC	ECOVE ESC	ECOVE MEC			G.D. Development Corporation	Living Waste	General Industrial Waste	Township Office Cleaning Squad	Waste Disposal Institution	Foreign Waste Treatment Institution	Resource Recycling (energy-from-waste) Plant	Waste Treatment Institution
Ethics and Integrity				V			Anti-corruption (205)	Compliance	●		●		●		●								
Power Generation Efficiency	V						Energy (302)	Energy and Resource Conservation	●		●		●		-								●
Development of Renewable Energy	V						Specific to ECOVE	Circular and Low-carbon Economy	●		●		-		-								●
Professional Research & Development and Technical Competency			V				Specific to ECOVE	Innovative Research and Development	●		●		-		-								●
Development of Recycling and Reuse	V		V				Specific to ECOVE	Innovative Research and Development	●		●		-		-								●
Air Pollution Prevention				V			Emissions (305)	Energy-from-Waste (EfW)	●		●		●		●								●
Employee Benefits and Compensations					V		Employment (401)	Human Rights Protection and Benefits	●		●		-		-								-
Talent Retention and Recruitment					V		Training and education (404)	Talent Development	●		●		-		-								-

## Materiality Analysis Matrix



## Short-term, medium-term, and long-term goals for material issues

Material Issue	Importance to Operations and Management	Commitment	Strategy	Long-term Goal (2022)	2019 Goal	Achievement in 2019 (V: Achieved X: Not achieved)	Corresponding Chapter/Section
<b>Power Generation Efficiency</b>	Power efficiency will directly impact the Company's revenue, and enhancing the power generation per ton of waste and achieving stable power efficiency will help the Company's Operations and Management to grow	Continue to enhance the "resource cycling" efficiency™ to reduce environment impacts, achieving both environmental sustainability and social responsibility	Continue to promote systematic energy conservation improvements and add inverters to large fans	Maintain power sold per ton of waste at 462 kwh/T	Reached 462kwh/T for power sold per ton of waste	V	Energy-from-Waste (EfW)
<b>Development of Renewable Energy</b>	Solar power development is one of ECOVE's three core Operations and Management. We have already actively invested in a variety of project types and will work in line with the government's green energy policy in the future, which will help us to continue investing in expanding the scale of Operations and Management	Invest in expanding the scale of Operations and Management in line with the government's green energy policy	Actively compete for development rights to large-scale projects and increase capacity in solar power-building in line with green energy development	Cumulatively generate more than 240 million kWh of solar power as of 2022	Cumulatively generated more than 180 million kWh of solar power	V	Circular and Low-carbon Economy
<b>Development of Recycling and Reuse</b>	In addition to reducing environmental impacts, after process improvement, recycling and reusing waste can also enhance competitiveness and help us to achieve sustainable management	Improve the integrated application of technology, enhance competitiveness, and achieve sustainable operation	Optimize PET bottle cleaning process and equipment improvements	Cumulatively sell 200 units of cleaning equipment by 2022 (comparative to reducing the use of 2.37 million ton of crude PET materials each year)	Equipment sale increased by 5% over that of 2018.	V	Circular and Low-carbon Economy
			Continue to invest in various waste reuse business to increase the rate of reuse	Increase the cumulative reuse volume to 14,000 tons by 2022 (comparative to reducing 14,000 tons of crude material)	Expanded into a new waste reuse business	V	
<b>Professional Research &amp; Development and Technical Competency</b>	Researching and developing new engineering methods appropriate to the industry is important to increase understanding of technology and personnel productivity in pursuit of highly productive Operations and Management	Research and develop new engineering methods appropriate to the industry in pursuit of highly productive Operations and Management	Develop safer, faster, and higher quality engineering methods	Receive three patents each year	Received three patents	V	Innovative Research and Development

Material Issue	Importance to Operations and Management	Commitment	Strategy	Long-term Goal (2022)	2019 Goal	Achievement in 2019 (V: Achieved X: Not achieved)	Corresponding Chapter/Section
<b>Ethics and Integrity</b>	Integrity and honesty are the cornerstones of ECOVE's sustainable management, as well as the basic principle that we value the most	Continuously enhance the corporate governance system and management functions to protect the rights and interests of stakeholders, ultimately achieving sustainable development	ECOVE has internal regulations in place, conducts educational training and advocacy, and cultivates a culture of ethical business and legal compliance through providing sufficient reporting channels and protection	100% of ECOVE's employees abide by the Government Procurement Act and the Company's anti-bribery policy	100% of ECOVE's employees abided by the Government Procurement Act and the Company's anti-bribery policy	V	Compliance
<b>Air Pollution Prevention</b>	The quality of air pollution emissions is emphasized by all sectors, as well as a key indicator that ECOVE values and strives to improve	Contribute to the sustainability of the environment by setting carbon reduction targets in compliance with laws	Increase waste inspection to reduce the ratio of inflammable waste from entering facilities, maintaining normal Operations and Management of air pollution prevention systems	Dioxin test pass rate: 100%	Dioxin test pass rate: 100%	V	Energy-from-Waste (EfW)
<b>Employee Benefits and Compensations</b>	Attracting, retaining, and motivating talent we need is important as it inspires employees' willingness to work and brings their talent into full play, thereby contributing to the Company's productivity	Promise to offer employees fair and competitive salaries and benefits	Establish a fair and competitive employee compensation system that links with future business strategies and goals	Competitive employee salaries and benefits	New issue	No goal set	Talent Composition and Compensations
<b>Talent Retention and Recruitment</b>	Recruiting and retaining competitive talent effectively is conducive to the Company's sustainable development	Improve employees' identification and compliance with ECOVE's corporate culture to bring employees' talent into full play	Spare no effort to cultivate outstanding employees, encourage continuing education and sharing of knowledge and skills, and create a healthy and friendly workplace	1. Turnover rate: 5%~8% 2. Recruit talent that agrees with ECOVE's corporate culture	New issue	No goal set	Talent Composition and Compensations



# Response to the United Nations' Sustainable Development Goals

ECOVE integrates the UN Sustainable Development Goals (SDGs) into goals and actions that are tied in with its business strength. By internalizing SDGs into business activities, we grasp an opportunity to further our sustainable development with mitigated impacts on the environment.



**SDG3**  
Good Health and Well-being

## Protect occupational health and safety for employees

3.1 \ 3.3 \ 3.4 \ 3.5 \ 3.6 \ 3.8 \ 3.9 \ 3.a \ 3.b

- Received certificate for ISO45001 Occupational Health and Safety Management System
- Total recordable case rate (TRCR) : 0
- Provided employees health checkup, including follow up on health checkup results to assist staff with elevated risks to seek medical attention
- Tracked blood lead of employees



**SDG6**  
Clean Water and Sanitation

## Participate in water resource recycling and reuse

6.1 \ 6.3 \ 6.4 \ 6.6 \ 6.b \ 6.c

- New Taipei City Gravel Water Treatment Plant cumulatively treated 40,487,639 metric tons of wastewater in 2019
- Zhonggang Water Resource Center cumulatively treated 3,085,464 metric tons of wastewater in 2019
- Linkou Water Resource Center cumulatively treated 19,413,795 metric tons of wastewater in 2019



**SDG4**  
Quality Education

## Promote environmental education to enable a green future

4.3 \ 4.5 \ 4.6 \ 4.7 \ 4.a \ 4.b

- Currently operate and manage five energy-from-waste incineration plants (Keelung, Houli, Miaoli, Tainan, and Tainan Science Park) that have been accredited as environmental education facilities by the Environmental Protection Administration (EPA) to encourage more children to learn about environmental protection
- Expanded the scope of environmental education by launching a three-year project, "Step by Step: Factories for Sustainable Environmental Education," from 2018 to 2020; organized fun-filled environmental education courses at 22 elementary schools in 2019
- Industry-academia cooperation: Added two school-to-long-term internship programs

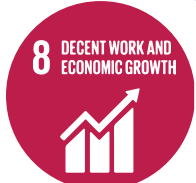


**SDG7**  
Affordable and Clean Energy

## Promote renewable energy

7.1 \ 7.2 \ 7.3 \ 7.b

- The main business activities of ECOVE Solar Energy Corporation, an investment of ECOVE, include development, investment, supervision, and operation of solar photovoltaic systems. Total power generated was approximately 64,640 MWh in 2019
- The heat generated during incineration process was transferred to power, which was supplied back to our facilities as well as sold back to Taiwan Power Company



**SDG8**  
Decent Work and Economic Growth

**Provide employment opportunities for the youth**

8.1、8.4、8.5、8.6、8.7、8.10

- Due to the expansion and development of the Group Resource Cycling Business (GRCB), ECOVE had 94 new employees in 2019, demonstrating our effort to provide many job opportunities
- Recruited 10 physically or mentally challenged individuals
- Occupational disaster-related disability rate : 0% ; number of deaths:0



**SDG11**  
Sustainable Cities and Communities

**Reduce hazardous impacts on the environment from the cities in terms of waste disposal and subsequent management**

11.5、11.6、11.7

- Received the BS8001 Circular Economy certificate
- Monitored and treated waste and pollutants from energy-from-waste plants, as well as bottom ash and fly ash in compliance with the laws

**While providing services, we strive to reduce energy and resource consumption to fulfill social responsibility, in addition to promoting public purchasing processes conducive to sustainable development**

12.4、12.5、12.6、12.7、12.8

- BoReTech Co., Limited, an investment of ECOVE, is equipped with manufacturing competencies of PET bottle recycling and cleaning systems and cleaning solution planning. We can reduce water resource consumption by building highly efficient recycling and cleaning facilities.
- The energy-from-waste plants that ECOVE operates and manages sold approximately 1,107,360 thousand kWh to Taiwan Power Company in 2019; in other words, 82% of the total power consumption can be transmitted to Taipower's power grids, while the remaining 18% can be used and operated in-house
- We promote green procurement by selecting eco-friendly products such as variable-frequency equipment, highly energy-efficient transformers, and LED lighting, replacing vehicles with more eco-friendly tractors, and installing solar photovoltaic plants equipped with energy-efficient solar cell modules and converters. The amount of green procurement in 2019 increased by 187% over that of 2018.



**SDG12**  
Responsible Consumption and Production



**SDG13**  
Climate Action

**In terms of mitigation and adaptation to climate change, the Company conducts early preventive warning and increases risk awareness, thus helping us to coordinate resources and fulfill energy management and to reduce GHG emissions**

13.1、13.2、13.3、13.a

- Conducted the climate change risk analysis for our three major business activities and five climate-related sources of risk (high temperature, typhoons, thunderstorms, floods, and droughts) to evaluate the scope of impact and impact to Operations and Management and to draft management strategies
- Conducted GHG inventories regularly for waste incineration and thermal energy conversion processes to further understand the GHG emissions at each plant and to plan for GHG reductions from Operations and Management
- Miaoli Plant facilitated the EPA to establish the "waste treatment service" carbon footprint rules by product type and received carbon footprint verification.

# Participation in External Entities 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.

Name of Organization
Center for Corporate Sustainability (CCS) <sup>1</sup>
Alliance for Sustainable Development Goals (A.SDGs)
Sustainable & Circular Economy Development Association
Chinese Institute of Engineers
The Chinese Institute of Environmental Engineering
Taiwan Boiler Association
Taiwan Telecommunication Engineering Industry Association
Taiwan Environmental Engineering Association
Taiwan Refrigeration & Air-conditioning Engineering Association of R.O.C.
Taiwan Water Pipe Engineering Association
Solar PV Generation System Association of R.O.C (PVGSA)

Note 1: As a director.

ECOVE has accumulated 20 years of experience in O&M services for EfW plants, and has expanded to other fields, like solar power, and recycling and reuse. Not only have we been invited to share experience in Taiwan in domestic and overseas forums, but we can also be seen in major media.



- European Bank for Reconstruction and Development invited ECOVE Chairman to give a speech on circular economy, and visited Miaoli Plant to videotape the site. The picture on the right side shows a maintenance test for the crane. Youtube link: <https://youtu.be/ABS1stofN44>



ECOVE Intelligent Management System was published in German magazine Global Recycling.



ECOVE's outstanding projects in solar power were covered by Indian media.

## Participation in Seminars or Forums

ECOVE actively participates in national and regional environmental policies and issues. Through forums or print media, we have been invited by domestic and overseas government or non-governmental organizations to share more than 20 years of our 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. This helps to build cornerstones in resource cycling economy and to ensure that we stay on top of the trends.

Taiwan	
Organizers	Content of Speech
Waste Incineration Technology Forum by the EPA	Prevention and Improvement Measures for Unplanned Incinerator Shutdowns
The Second Taiwan-Germany Environmental Forum by the EPA	Overview on Taiwan Waste to Energy (WtE) Industry
Forum on High-tech Industry Environmental Safety and Sustainable Development by the Ministry of Science and Technology	Waste Treatment System in Science Park
31st Annual Meeting - Waste Treatment Technology Forum by the Chinese Institute of Environmental Engineering	Cases of High-tech Industry Waste Recycling
Taiwan Chemical Engineering Society Annual Meeting and Achievement Presentation of the Chemical and Engineering Department of the Ministry of Science and Technology	Integration and Application of Separation and Purification Technology to Implement Green Technologies Development
3rd Circular Economy Forum by the Center for Corporate Sustainability	ECOVE's Circular Economy Business Model and Experience Sharing
Keynote Speech by the Department of Civil Engineering, National Taipei University of Technology	From Participation to Fulfilling Circular Economy - Corporate Management in the Age of the SDGs
Seminar on Business Management Model by Tunghai University	Business Management and Value Creation

Overseas	
Organizers	Content of Speech
Regular Environmental Seminar by the Macau Institution of Engineers	Exploration of Food Waste Treatment Technology
Seminar for Environmental Protection Industry in Hanoi, Vietnam	The Development of EfW plants in Taiwan
2019 Cross-strait Enterprise Energy Conservation and Environmental Protection Industry Cooperation Seminar, Wuhan	The Key to High-quality Development of the Waste Incineration Industry - Experience in Intelligent and Delicacy Management
The 13th (2019) Cross-Strait, Hong Kong and Macau Solid Waste Management Forum, Xi'a	Using Intelligent Management and Independent Technology to Improve the Operating Efficiency of Incineration Plants
Knowledge Sharing Conference by Asian Development Bank (Manila)	The Development of EfW plants in Taiwan



The keynote speech on "ECOVE's Business Model and Experiences on Circular Economy" was made at the 3rd International Conference on Integrated and Innovative Solutions for Circular Economy.



## Integrity Management

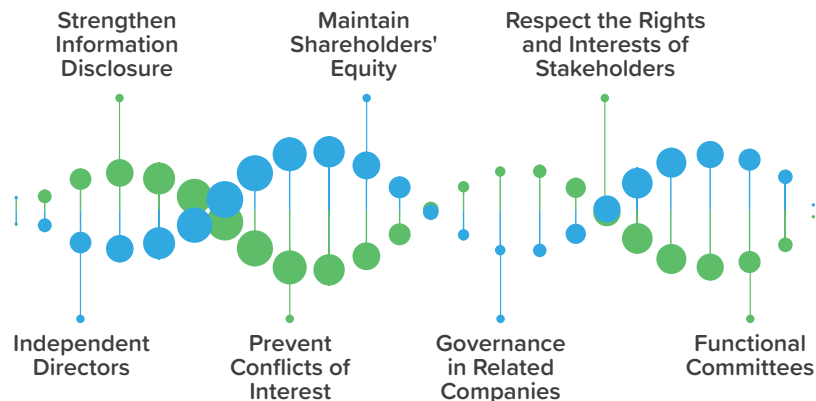
ECOVE is committed to improving the efficiency of resource recovery and reuse, so that the precious resources on this planet can be reused and create value, thereby enhancing the value and utilization of resources. We will continuously strengthen our three major core areas (waste management and energy-from-waste, recycling, and renewable energy) to build a business model on circular economy. This will push us forward to becoming the most reliable provider of industry-leading 'resource cycling' services and making corporate sustainability a reality.

### Corporate Governance

102-18 102-22~25 102-27~28 102-36~37

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. In addition to focusing on resource cycling in our investment strategies, ECOVE places even higher emphasis on the execution of sustainable business development. Founded on a transparent, professional, and healthy corporate governance principle, we have scored among top 5% in the Corporate Governance Evaluation from the FSC for six consecutive years and was also named top 10% among the listed companies on the TPEX for "non-financial and non-electronics companies with net worth over NT\$10 billion" for a second year in 2019, securing our place as a responsible corporate citizen as well as the benchmark for business information disclosure and ethical business management.

#### Areas Covered by Governance



### Composition, Functionality, and Performance of the Board of Directors

The Board of Directors is ECOVE's highest level of decision-making unit. Each term of the Board will serve for three years and election of directors adopts a nomination system. Directors can be reappointed if they are re-elected. The Board is formed by election of nine directors (including three independent directors) and is responsible for drafting the Company's business objectives and important strategies. The Board of Directors operates in accordance with the Rules Governing Procedure for Board of Directors' Meetings and convenes at least one meeting each quarter. The Board meetings abide by the interest recusal system, where in case a director's personal interest is involved in a proposal, the director should automatically seek for recusal and should be prohibited from exercising voting rights on behalf of other directors. Currently, all members of the Board of Directors are males over the age of 50. In 2019, the average attendance rate of all Board members was 92%.

Members of the Company's Board of Directors have the professional knowledge, experiences, and characters to perform their duties, and include personnel from financial sector, attorney and related fields as well as from the business sector. They have in-depth international perspective, decision-making, leadership, and crisis management skills to respond to changes from various economic, environmental, and social aspects. The directors undertake continuing studies pursuant to "Directions for the Implementation of Continuing Education for Directors and Supervisors of TWSE Listed and TPEX Listed Companies" to continuously enhance the Board's understanding for emerging issues as well as to continuously enhance the effectiveness of governance. In 2019, all directors completed the required continuing education pursuant to the "Directions for the Implementation of Continuing Education for Directors and Supervisors of TWSE Listed and TPEX Listed Companies." Each director participated in at least six hours of such training.

To implement corporate governance and enhance the functionality of the Board of Directors, as well as to build performance objectives and reinforce the operating efficiency of the Board, ECOVE amended the Regulations Governing the Board Performance Evaluation at the 13th meeting of the 7th-term Board of Directors in May 2019, stipulating that the evaluation of the Board performance shall be conducted by external, professional independent institutions or external experts and scholars at least once every three years and that the results of internal and external Board evaluations shall be reported by the end of the first quarter of the following year; in addition, the scope of evaluations has expanded to cover the Board of Directors as a whole, individual Board members, and functional committees. The methods of evaluation include the self-evaluation of the Board and functional committees (including Remuneration Committee and Audit Committee), self-evaluation of individual Board members, external evaluation conducted by external, professional independent institutions or external experts and scholars, and other appropriate methods. The evaluation results of the Board performance and follow-up improvements should be reported to the Board of Directors and disclosed in the annual reports. The self-evaluations of the Board and functional committees (including Remuneration Committee and Audit Committee) and the self-evaluation of individual Board members were completed in 2019 and reported to the Board of Directors in March 2020.





## Strengthening Functions of the Board of Directors

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.

### Remuneration Committee

#### 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.

Convener : Shean Bii, Chiu  
Members : Shuh-Woei Yu and James Tsai

Three meetings were convened in 2019. The average attendance rate of the three members was 100%.

Note: The term of the current Committee is from June 26, 2017 to June 25, 2020.



Remuneration Committee Charter



### Audit Committee

#### Responsibilities :

The Audit Committee was voluntarily formed in 2014 to supervise the Company's fair presentation, appointment (and termination), independence and performance of CPAs, effective implementation of internal control, compliance of relevant laws and regulations, and control of existing or potential risks.

Convener : Shean Bii, Chiu  
Members : James Tsai and Shuh-Woei Yu

Five meetings were convened in 2019. The average attendance rate of the three members was 100%.

Note : The term of the current Committee is from June 26, 2017 to June 25, 2020.



Audit Committee Charter



## Director and Manager Remuneration Structure

ECOVE determines appropriate remunerations paid to directors and managers in accordance with the "Guidelines for the Performance Evaluation and Remuneration of Directors and Managers" approved by the Board of Directors. By referencing the industry standards, ECOVE also considers the Company's business performance and each director/manager's personal performance and contribution to the Company. The Remuneration Committee and the Board of Directors are responsible to review the appropriateness of remunerations paid to directors and managers on a regular basis, and should timely modify the remuneration system based on business Operations and Management and relevant laws and regulations. The remuneration system should not guide directors, the President, and Executive Vice Presidents to engage in business activities beyond the Company's risk appetite, so as to avoid suffering losses after paying remunerations to directors and managers.

### Shareholding Structure

<b>Total</b>	<b>Number of Shareholders : 7,675</b>
	<b>Ownership : 67,105,148</b>
	<b>Shareholding Ratio : 100</b>
	* As of March 30, 2020

#### Other Legal Persons

Number of Shareholders : 61  
Ownership : 41,826,176  
Shareholding Ratio : 62.33

#### Foreign Companies or Foreigners

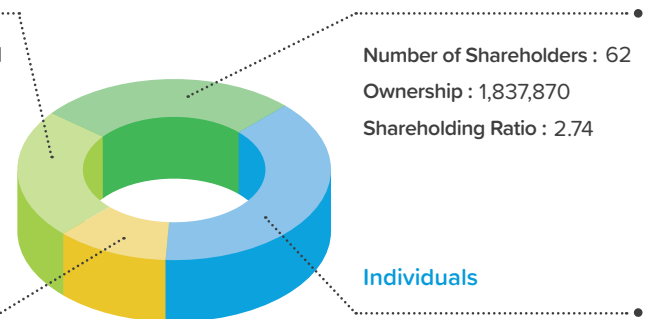
Number of Shareholders : 62  
Ownership : 1,837,870  
Shareholding Ratio : 2.74

#### Financial Institutions

Number of Shareholders : 11  
Ownership : 5,081,281  
Shareholding Ratio : 7.57

#### Individuals

Number of Shareholders : 7,541  
Ownership : 18,359,821  
Shareholding Ratio : 27.36



## Internal Control System

EVOE'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 and Management, 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.

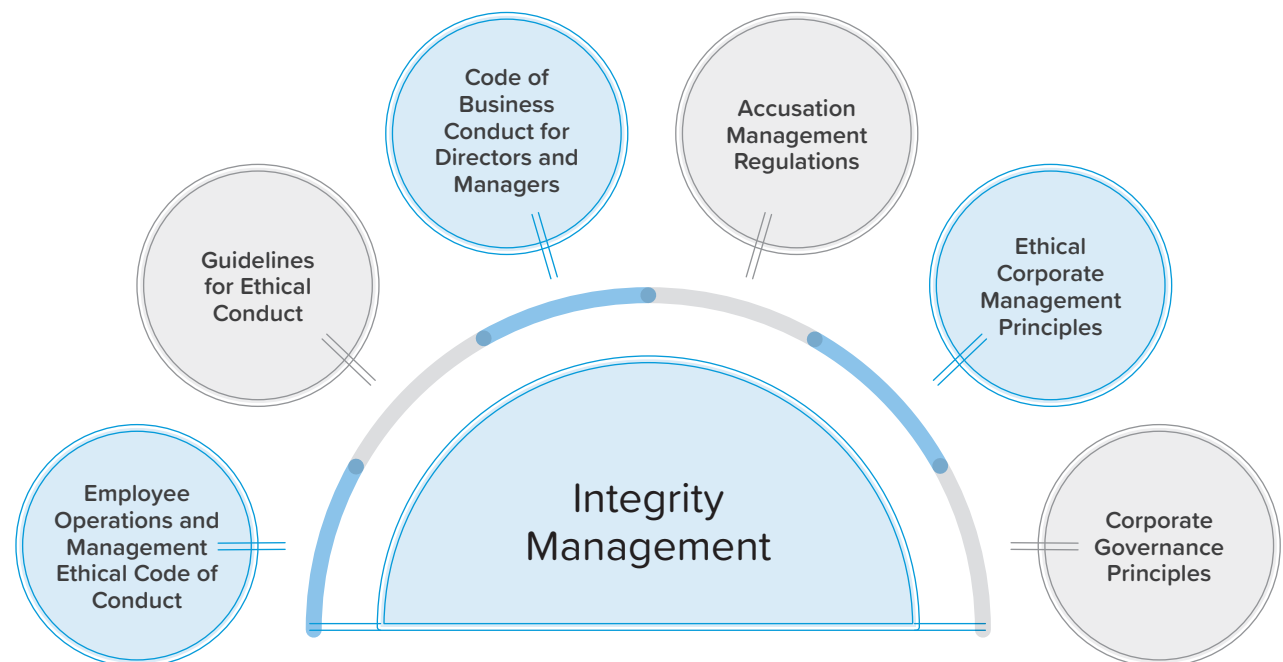
The Audit Department implements audit Operations and Management in accordance with the annual audit plan approved by the Board of Directors, discloses the missing and abnormal items found in the internal control system in the audit report, traces them after the report is submitted, and compiles tracking 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, the audit supervisor also attends the Audit Committee and the Board meetings to submit an audit report to implement the audit results.

## Compliance

102-16~17

205-1~3

Based on the ethical business management principle, ECOVE has established separate basic codes of conduct for directors, managers, and employees to ensure that day-to-day Operations and Management all comply with business ethics and integrity. These codes include "Corporate Governance Principles," "Code of Business Conduct for Directors and Managers," "Employee Operations and Management Ethical Code of Conduct," "Ethical Corporate Management Principles," "Guidelines for Ethical Conduct," and "Accusation Management Regulations." At the same time, work rules are also established as basis for compliance during day-to-day activities for all employees of ECOVE. Furthermore, to uphold fair trade and prevent bribery and corruption, ECOVE requires that employees should not give discounts when conducting trading activities with stakeholders, and cannot ask for, make deals with, give, or accept gifts, entertainment, kickbacks, or bribes for him/herself or on behalf of others when carrying out his/her responsibilities.



ECOVE is a member of CTCL, which sees "Most Reliable" as its brand positioning. To ensure that all employees clearly understand ethical business practices, the "Guidelines for Ethical Conduct" were stipulated in 2016 as the basis for compliance for employees' conduct. Moreover, a reporting website has been established on the Employee Opinion Platform. The website is established by third-party, independent Deloitte Taiwan to ensure that incidents reported are properly investigated and dealt with. In case anyone within the Group has found any internal inappropriate conduct to be causing or has caused negative effects to the Group or infringed the rights of all employees, the incident can be reported on the aforesaid platform.

ECOVE and major subsidiaries have organized internal and external educational training related to ethical business management for all employees. Such training includes promotional activities for communications with employees and corporate culture workshop, as well as online courses for employee ethical conduct. When assuming office, each employee of ECOVE is required to take training on the "Guidelines for Ethical Conduct." 100% of the Board members have also taken courses on ethical business management to strengthen the awareness of ethical business management at the governance level.

Furthermore, to protect the rights and interests of stakeholders, ECOVE also requests all employees from related companies to sign "Declaration of Confidentiality Agreement, Prohibition on Participation in Competitive Business and Protection of Intellectual Property." ECOVE pursues sustainable business management and protects the rights and interests of the Company, on top of seeing "integrity" as a part of the Company's corporate culture. We actively promote ethical management policy, and no corruption or bribery incident occurred in 2019. Our conscientious business image has received widespread recognition from our partners.

## Information Disclosure

ECOVE emphasizes transparent information disclosure and provides symmetrical information for investors and stakeholders, fulfilling integrity and transparency in corporate governance. Various channels have been set up to provide relevant information for diverse stakeholders.



# Risk Management

102-11 102-15~17

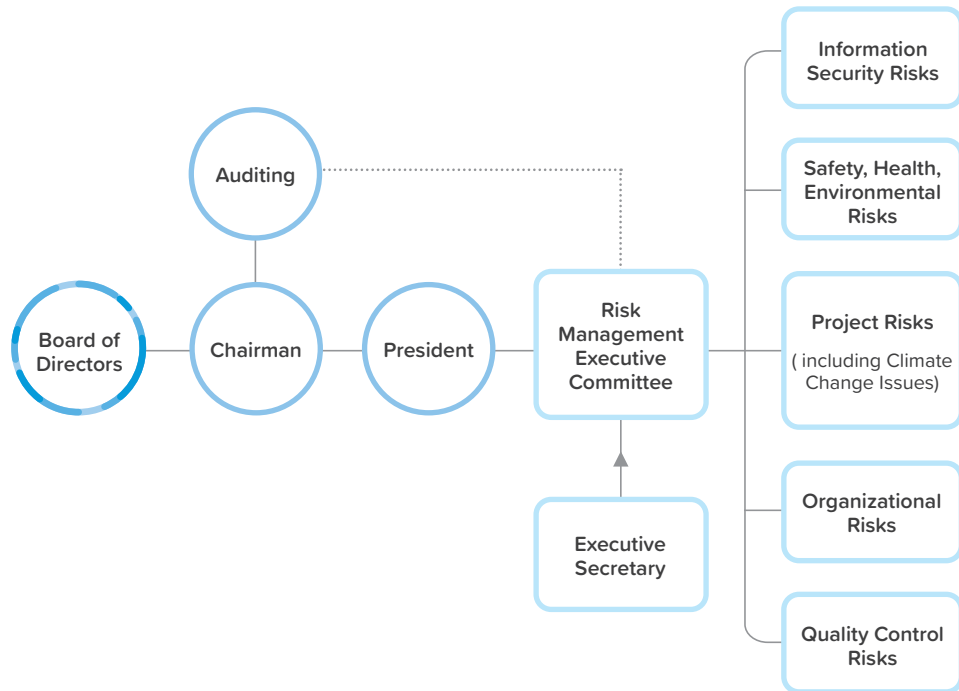
To strengthen the operational system and competitiveness of the Company and subsidiaries, so as to systematically identify and evaluate possible risks during Operations and Management, the "Risk Control Guidelines" were published in 2017, and the Risk Management Executive Committee has been established. The Risk Management Executive Committee comprises ECOVE's department supervisors and Chairmen, Presidents, and senior managers from subsidiary companies. The Executive Secretary is an executive appointed by the Chairman to be in charge of coordinating meetings and compiling and following up related information, so as to ensure the continued effectiveness of the risk management mechanism.

The Risk Management Executive Committee controls various operating risks. At the same time, the Risk Management Committee was established based on the Risk Control Guidelines. Meetings are held regularly each year, and risk topics are prioritized and ranked after discussion from the Risk Management Committee, and

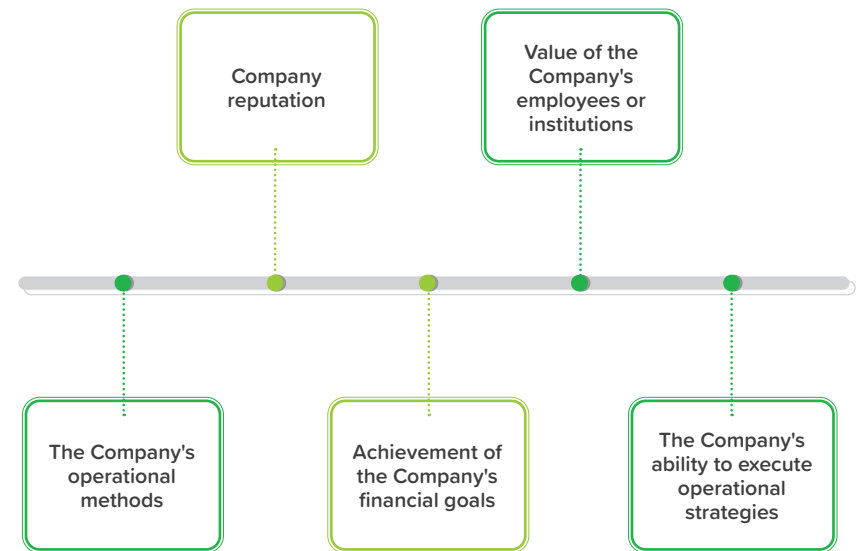
control measures will be proposed. ECOVE will continue to stay current on the implementation of control measures by reviewing audit to help the Board of Directors and managers ensure that risks are effectively controlled.

As an investment holdings company, ECOVE maintains control on various aspects of subsidiaries and requires subsidiaries to submit monthly Operations and Management 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, the Company conducts supervision tasks over subsidiaries that the Company invests in. Risk management is undertaken for the subsidiaries based on the nature of their respective industries to maintain appropriate risk separation and to maintain balanced and stable Operations and Management.

## Organizational Chart of the Risk Management Committee



## Scope of Risk Consideration



## 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

Referencing the spirit of ISO/IEC 27001, ECOVE established the "Information Security Management Principles" in 2012 in readiness for all kinds of cybersecurity threats. These principles specify the information security management system that is established to ensure the confidentiality, completeness, and availability of information controlled by the Company, further protecting the rights and interests of the Company and all employees. In 2012, the Company adjusted the offsite backup operations based on independent directors' suggestion that "the primary engine room should be more than 30 kilometers away from the offsite engine room per National Information & Communication Security Taskforce's instructions in 2003." In response to the Personal Data Protection Act, relevant measures and monitoring management mechanisms were added in 2013.

We understand that it is important to continuously implement the P-D-C-A (plan-do-check-act) cycle to strengthen the control over information security risks. By implementing, regularly reviewing, and constantly improving information security management, ECOVE is able to secure the sustainable business operations and development across the group. This is also crucial to the future of ECOVE's IT implementation.

### Security Risk Assessments

ECOVE conducts the risk assessment every year to proactively identify potential information security risks. From the combination of potential threats and vulnerabilities, we have identified the following main risks :

- The fraud ring used fake e-mails to trick employees into making 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.

## Information Security Management Mechanisms

To address the above risks, ECOVE follows the information security management guidelines, introduces technology-based solutions, and strengthens security training. With various information security management mechanisms implemented at the same time, we manage to reduce threats and control risks. Key mechanisms are described as follows :

### Key Information Security Management Mechanisms

- For hard drives in scrapped computers, a special erasing device (the United States Department of Defense's 5200.22 specifications) is used to prevent intentionally tracing or recovering or manually dismantling and destroying the records of the hard drives.
- ECOVE conducts social engineering simulations and provides security training to enhance employees' awareness of e-mail security.
- Detection software is installed on the client to block the connection of USB and installation of personal 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.
- Anti-virus software and spam filtering software are installed in the e-mail gateway to reduce the risk of social engineering attacks.
- The confidentiality of documents is assured through the sensitive document management system and disk encryption.
- Network attached storage (NAS) is provided for employees of major departments to backup and store electronic data.
- We introduce Chunghwa Telecom's cloud services, along with the firewall, to control network traffic and applications. The Intranet security and database access monitoring and management system is established.
- We regularly conduct internal/external audits as a basis for improving the operation of both the information security system and the security management system.

ECOVE continues to invest in information security operations every year. In 2019, we invested NT\$4.89 million in strengthening security infrastructure and improving the information security management system and security training in hopes of enhancing our information security capacity in aspects from management to technology. Training is organized to increase employees' security awareness and ability to manage information security. In 2019, the number of information security training hours per employee reached 32. To effectively share the losses caused by information security risks, we have purchased "electronic equipment insurance" at the amount of NT\$40.5 million or more.



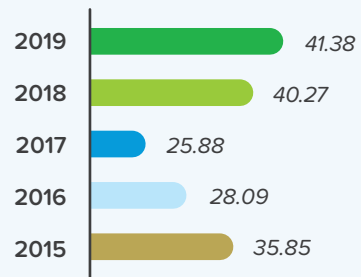
# Management Performance and Industry Outlook

102-15 102-45 201-1

## Management Performance

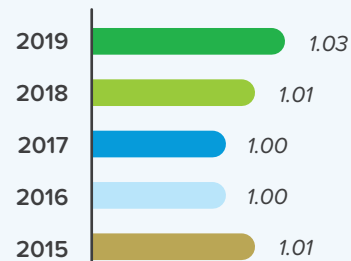


**Debt to Asset Ratio** Unit : %



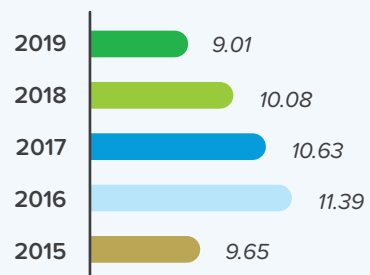
Note : Per consolidated financial statements

**Financial Leverage**



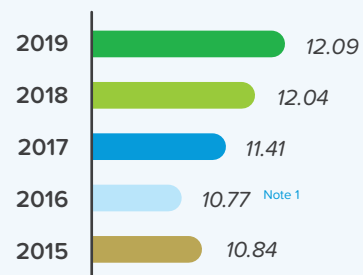
Note : Consolidated

**Return on Assets (RoA)** Unit : %



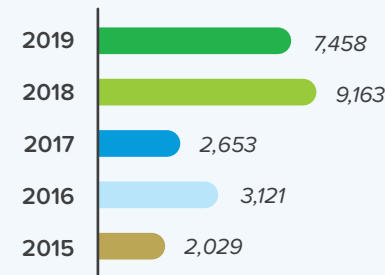
Note : Per consolidated financial statements

**Earnings per Share (EPS)** Unit : NT\$

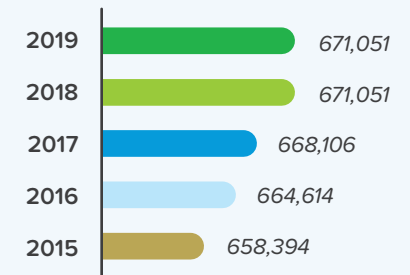


Note : Per consolidated financial statements

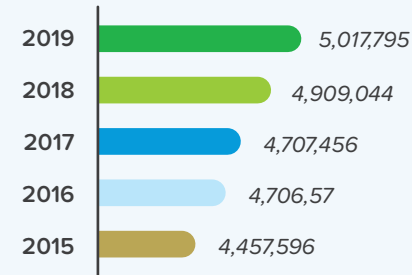
**Individual Income Tax Expense** Unit : NT\$1,000



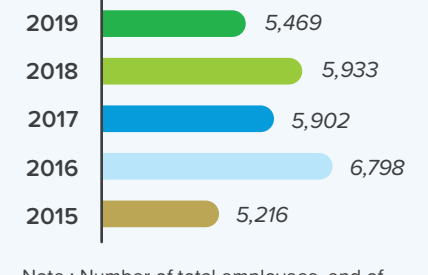
**Individual Paid-in Capital** Unit : NT\$1,000



**Individual Total Assets** Unit : NT\$1,000

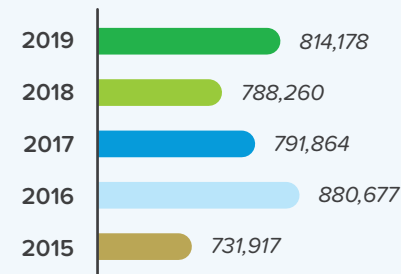


**Average Operating Revenue per Employee** Unit : NT\$1,000

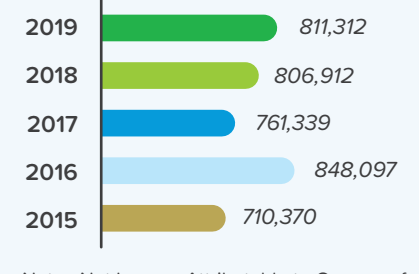


Note : Number of total employees, end of year ; consolidated financial statements

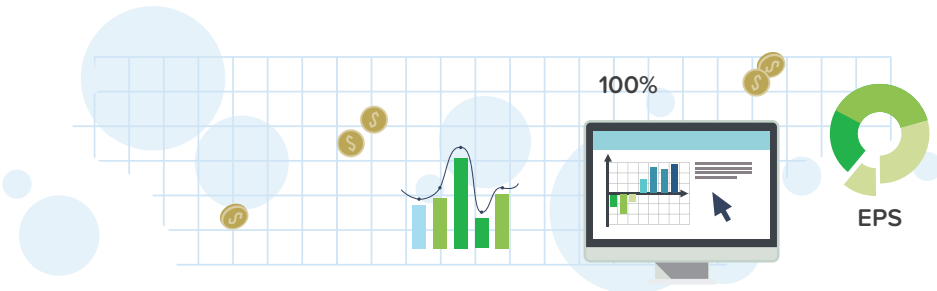
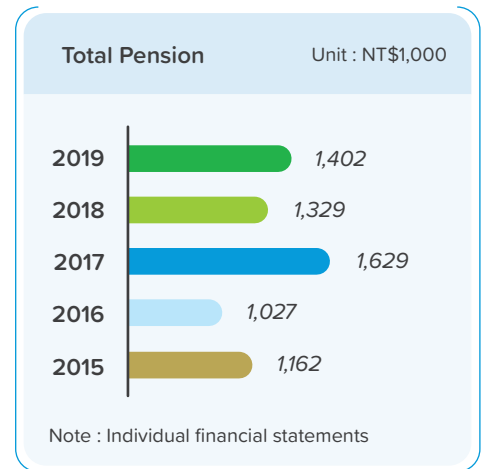
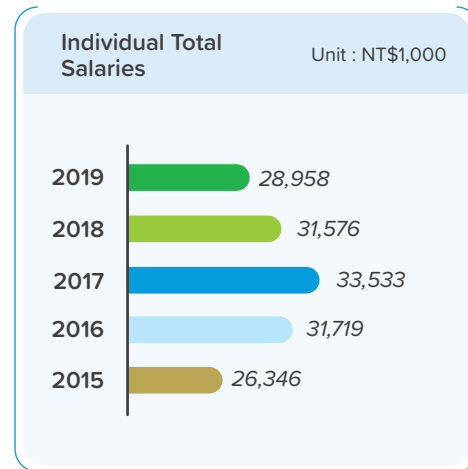
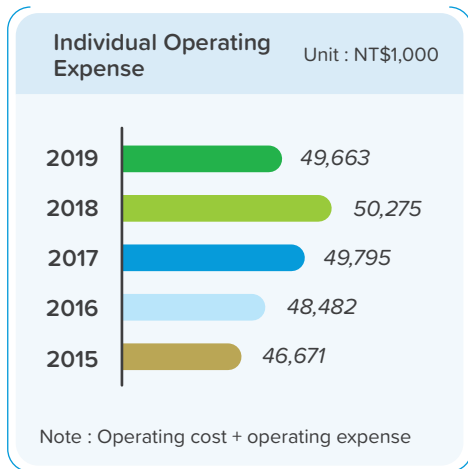
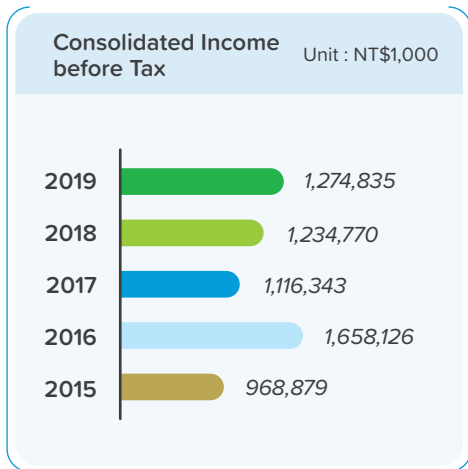
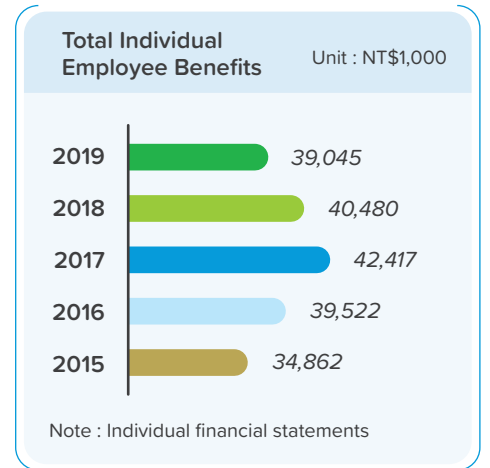
**Individual Total Revenue** Unit : NT\$1,000



**Individual Income after Tax** Unit : NT\$1,000



Note : Net Income Attributable to Owners of Parent Company



Note 1 : 2016 EPS was net of influences from SINOGAL.

Note 2 : Consolidated total revenue in 2016 was higher than the average, which was mostly attributable to the adjustment of selling price of power sold from SINOGAL, leading to an increase in revenue upon approval of owners of the Company.

## Industry Outlook

Looking forward to 2020, ECOVE will continue to integrate SDGs into business activities in the domestic market while expanding overseas Operations and Management to seek for more opportunities for

project cooperation. 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 energy-from-waste (EfW), renewable energy, and recycling, showing the world Taiwan's resource cycling technology and strength.

### Energy-from-Waste (EfW)

The Company will continue to pursue tenders for large-scale comprehensive processing facilities and business opportunities in renovating existing incineration plants or outsourced Operations and Management in Taiwan. Overseas, the Company will forge strong partnerships with local companies to advance development and select appropriate targets to duplicate its successful model of public-private partnership (PPP) in BOT projects for incineration plants and sophisticated O&M capabilities overseas as it advances into ASEAN countries, India, and Mainland China.

#### Opportunities

Global warming, energy conservation and carbon reduction topics will make renewable energy gain attention, and may help to increase the selling prices of renewable energy. This is beneficial toward energy-from-waste business.

#### Risks

As greenhouse gases continue to impact the world, the Ozone's average temperature continues to rise over the years, causing existing steam-cooling system's efficiency to drop and power generation efficiency to decrease. Moreover, extreme climate such as El Niño and La Niña have led to more occurrences of rainstorms or droughts. Rainstorms brings floods, which lead significant amounts of low-thermal value and flooded waste to enter, lowering power generation efficiency. On the other hand, lack of water may cause systems to reduce loading or lower the efficiency in acidic gas treatment, leading to increase in water treatment chemicals.

### 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 large-scale public and private projects.

#### Opportunities

The government's green energy policy to accomplish 20GW of solar photovoltaic generation system installation by 2025 as well as large consumers' and green supply chain's demand for renewable energy-based electricity have largely expanded the development opportunities for the solar power industry, presenting favorable opportunities for the Company to continue expanding the scale of investment.

#### Risks

As Taiwan is located in belts of frequent typhoons and earthquakes, the cost of installation and maintenance is higher. In addition, uncertainties brought by climate change, and any market risks (e.g., intensive industry competition, increase in raw material prices, drop in wholesale power prices, and protests) will all significantly increase the investment, maintenance, and operating costs, increasing the difficulty in financial Operations and Management.

### Recycling

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 policy, industry economy, or incentives from CSR
- The government's promotion of renewable energy has caused 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 the production cost.

#### Risks

- Recycling material clearing  
The recycling 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 of clearing machinery.
- Recycling plant  
To prevent secondary environmental pollution during the recycling process, the government may gradually increase the standards for factory waste emissions. The capital and pollution control system needed by plants and facilities may also increase accordingly.

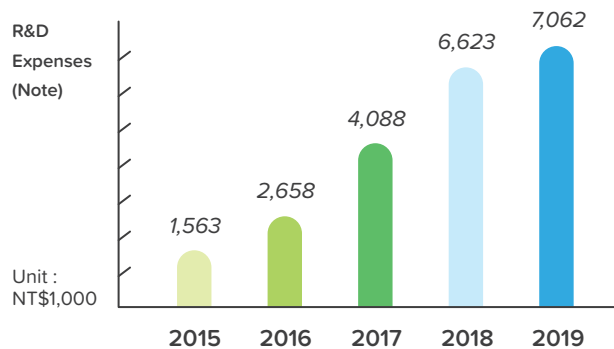
# Innovations and Sharing

ECOVE believes that cooperation can create additional value. Having held true to the corporate culture of Professionalism, Integrity, Teamwork, Innovation over the years, ECOVE has become a tightly-connected team with the support of all stakeholders. We help each other to achieve synergistic growth and to deliver premium products and service quality; in addition, we have maintained positive partnership with our suppliers. Through continuous communication and cooperation with our suppliers, we are confident of achieving a sustainable supply chain where the long-term viability of upstream, midstream, and downstream suppliers is reinforced.

## Innovative Research and Development

In response to the Industry 4.0 trends in global technology, ECOVE also actively integrates technologies to develop intelligent management, control, and maintenance, and introduces more advanced management tools (e.g., remote central control room, repair incident review, high-temperature camera for furnace inspection, advanced combustion control system, robotic slag removal, fixed-type shock wave ash-cleaning, and personnel safety positioning system). The important operation Index (IOI) such as emissions, abnormal equipment, and site inspection data can be accessed anytime, anywhere via mobile devices (e.g., ECOVE ESC IOI and LINE notification) to enhance the effectiveness of operation and management; moreover, we can also enhance the employee training and teaching effectiveness (e.g., 3D models virtual reality (VR) training, guiding and teaching, and expert systems).

### R&D Expenses over the Years



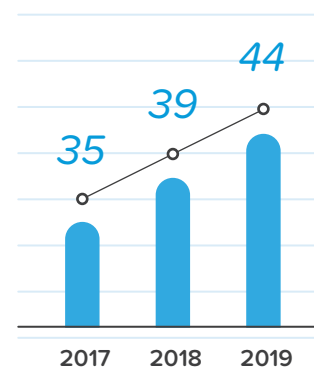
Note : R&D expenses are the labor expenditures incurred by the Research and Development Center for the development of new technologies and systems; the cost of each new technology or new system or the cost of integration with other project systems is attributed to the cost of each relative project.

## R&D Results - Proprietary Technology

In 2019, ECOVE obtained five new patents, namely, "low isopropyl alcohol concentration distillation tower combined with the supergravity centrifugal distillation system," "flatbed truck net safety covering device," "factory operation and maintenance expert system," "UAV factory inspection system," and "ratchet wheel." As of 2019, we have received 33 technical patents from Taiwan and 11 from China. Most of these proprietary technologies have been put into practice. ECOVE also focuses on environmental sustainability and promoting occupational safety and health. Out of all R&D results, 27 of our proprietary technologies can reduce environmental pollution as well as secure our competitive niche.

<b>Unmanned smart engineering</b>	Apply AI to the water tube wall cleaning robots and super-heater cleaning robots for planning cleaning paths and scale of cleaning
<b>Brand-new processing system</b>	Develop the confined-space personnel positioning system, UAV inspection application, expert system, remote central control room, electronic patrol management system, etc
<b>Improve processes, enhance energy efficiency, enhance productivity, and reduce pollution</b>	Exhaust gas re-circulation de-NOx system, boiler stoker-side water-cooling wall engineering, steam reheat cycle power generation
<b>Develop safer, faster, and higher quality engineering methods to enhance efficiency, reduce dependency on manual work, and reduce labor safety risk</b>	Explosion ash cleaning robots, sprinkling ash cleaning robots, and super-heater cleaning robots that do not involve AI functions

### Patents Applied



By installing an electronic elevator device on the flatbed trucks, employees no longer need to stand on the cargo while laying out or retracting nets, increasing occupational safety



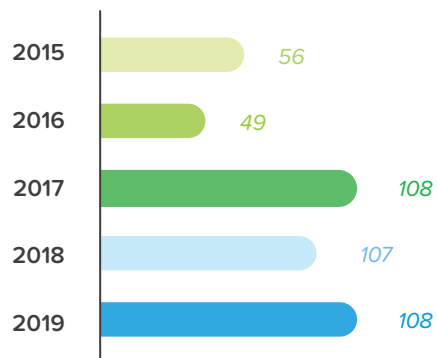
## Service Quality

Closely working with the government, industries, and communities, ECOVE provides diversified services through professional techniques and a spirit of excellence. We provide customers various fluent channels for feedback and conduct surveys to seek customers' advice. When receiving opinions from our customers, we have comprehensive processes designed to handle customers' opinions and respond immediately while requesting responsible departments to prudently and precisely analyze the causes of problems and to draft improvement plans and processes for better service quality.

### Customer Communication Channels

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 in the Past Five Years

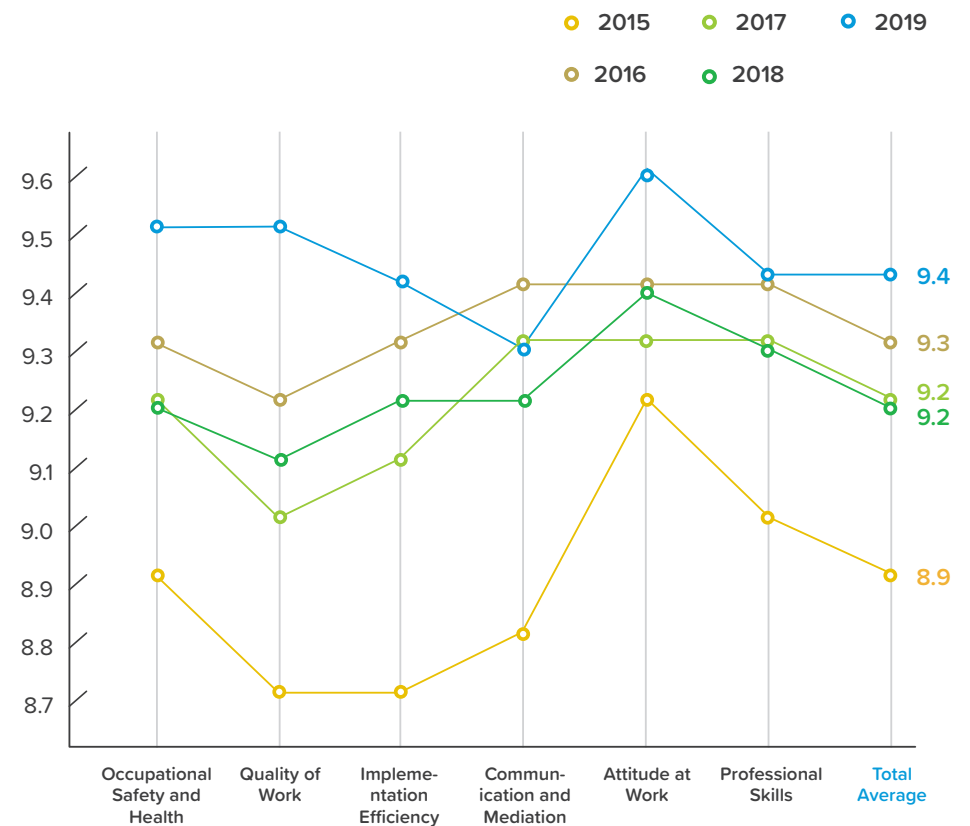


Note : Starting from 2017, we have added survey targets in each project to understand the level of satisfaction from those in charge of the projects and their supervisors; therefore, the number of surveys has increased.

## 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 2019, we received an average score of 9.4 points out of 10, the highest in the past five years. Points for all six categories exceeded 9. In the future, we will continue to improve, and we will see a total average score of 9 points as the minimum standard in order to provide better quality and perfect service.

### Results of Customer Satisfaction Survey in the Past Five Years





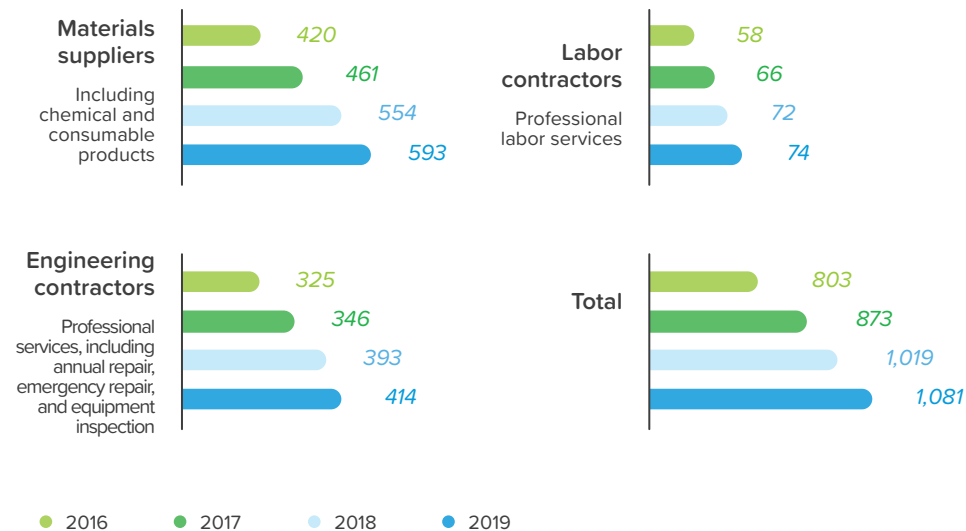
## Sustainable Supply Chain Management

102-9 204-1 308-1~2 408-1 404-1~2

ECOVE has set "the most reliable provider of industry-leading " resource cycling " services" as a vision. As the largest resource management company in Taiwan, ECOVE exerts its influence on the supply chain to work toward sustainability by promoting and fulfilling supply chain sustainability management. This helps us to handle future risks and opportunities and to increase resilience.

### Overview of Supply Chain

ECOVE's suppliers include suppliers of machinery components and consumables (including chemical and consumable products), as well as contractors that provide professional services, including annual repair, emergency repair, equipment inspection, and labor. Our suppliers can be divided into three categories: materials suppliers, engineering contractors, and labor contractors.



Note: The cumulative number of suppliers is counted based on suppliers whose cumulative transaction amounts have reached NT\$300,000 or more under the parent company's authorization rights starting from 2015. Transaction amounts of suppliers that meet this condition have accounted for 98% of annual transactions, and the rest 2% are transactions that have not met the designated threshold.

## Sustainable Supply Chain Development Strategy

Following the sustainable supply chain development strategy of our parent company, CTCI, which mainly includes "zero tolerance for unethical conduct," "full protection of employee rights," "safety first" and "local procurement," we invite our suppliers to join in this strategy. We manage supplier data through the CTCI's Suppliers & Subcontractors section and provide a sound communication system, including a reporting website, to communicate with suppliers.



**Zero Tolerance for Unethical Conduct**

ECOVE attaches great importance to the integrity management of suppliers. We check on the list of sanctioned suppliers on the Government e-Procurement System every quarter, including sanctioned suppliers due to the violation of the Government Procurement Act, and inflict penalties accordingly. 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.



**Full Protection of Employee Rights**

We value employee rights of our suppliers. For contractors commencing construction, they are required to purchase labor insurance for their employees in accordance with the laws of Taiwan; those overseas should comply with the laws of the foreign countries before commencing construction. 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 places importance on HSE at each workplace. We require that all contractors working at the construction sites should abide by the HSE regulations, and also communicate with suppliers and business partners about CTCI's HSE policy, making sure that all of our contractors, suppliers, and business partners fully understand and comply with relevant HSE regulations and together create a safe and healthy work environment. When entering construction sites every day, contractors convene a safety awareness meeting before commencing work.



**Local Procurement**

We source required materials and services from local vendors as many as possible and only source overseas when they are not available locally. 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

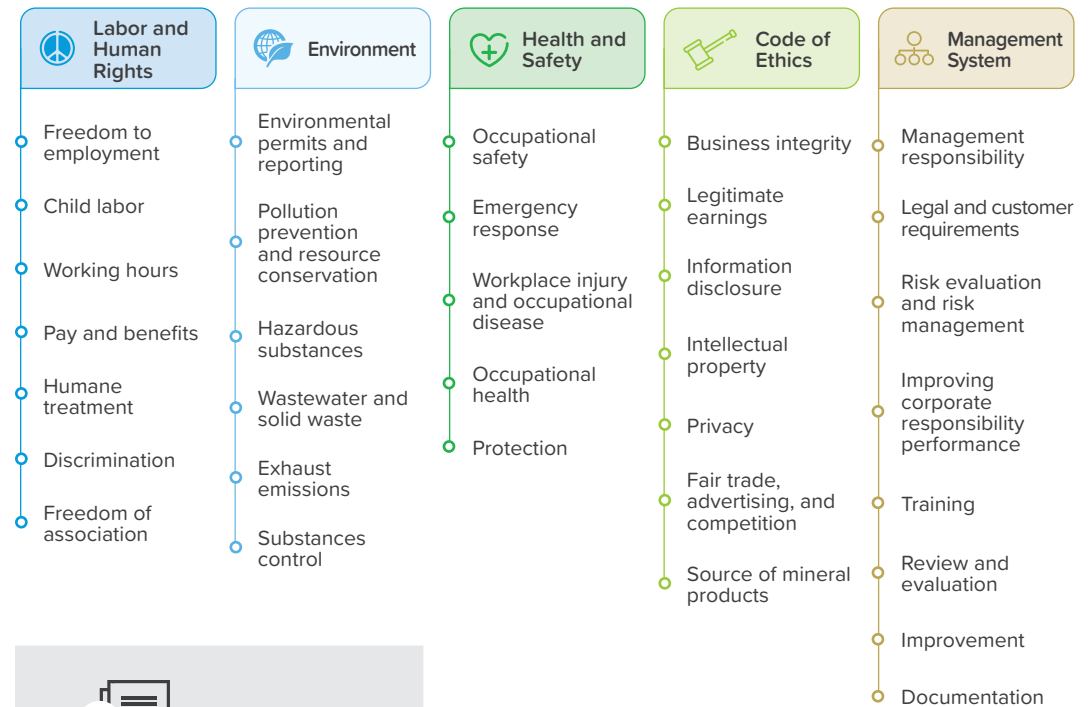
ECOVE believes that the consensus and partnership throughout the overall supply chain for sustainable development will be the key to reach sustainability for the entire industry. Therefore, ECOVE continues to require suppliers and contractors for complete compliance to all local laws and regulations. Hence, the "Supplier/Contractor Social Responsibility Policy" was established to request our supply chain to understand and comply with related social responsibilities. Priorities that we have always been advocating and demanding include the ban on child labor, protection of human rights, non-discrimination, fair treatment, legal working hours and pay, and friendly environmental management. 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.



## Supplier Code of Conduct

ECOVE is committed to promoting CSR and business partnerships. Therefore, we have established the "Supplier Code of Conduct" by referencing human rights, labor and environmental regulations and standards, and anti-corruption regulations under the international principles such as the UN Global Compact, Universal Declaration of Human Rights, and The UN Framework and Guiding Principles on Business and Human Right. This code is applicable to all vendors who provide products or services for ECOVE, including suppliers and their subsidiaries, related companies, and contractors. All business activities of ECOVE's suppliers are required to completely comply with this code and the local laws and regulations of their operating sites.

### ECOVE's Supplier Code of Conduct



## Strengthening Business Integrity

In response to the Group's advocacy for reinforcing the business integrity with suppliers, when interacting with suppliers such as asking for quotations, or participating in tender meetings or ordering procedures, we will advocate for CTCI and ECOVE's determination for integrity using written or spoken statements and explanations addressed to employees and vendors. Prior to the tender meetings, we will conduct Integrity Moment actions, and explain about the Supplier Code of Contract to vendors and to announce the prohibition of private interests and the information on whistle-blowing mailbox. We have also added the integrity statement clause on vendor ordering forms and engineering 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

To further fulfill CSR with suppliers, ECOVE encourages suppliers to comply with relevant CSR and environmental issues, and has asked suppliers to sign the "Social Responsibility Commitment," which is established based on the International Labour Organization (ILO) and the Social Accountability International 8000 (SA 8000) standard. The aspects of the objectives include ethical conduct, human rights protection, and environmental protection, and both parties will commit not to interfere with the employees' freedom of association, do not use child labor, do not infringe upon the rights of indigenous people, and do not undertake any matters that will harm human rights. Since the completion of the statement in 2014, we have actively invited suppliers and contractors to sign the statement. As of 2019, as many as 891 suppliers and contractors have signed the commitment. Each year, we request new suppliers to sign and also urge existing suppliers to become signatories. The number continues to increase. By 2022, we expect to make 100% of our suppliers signatories of the commitment. This helps to promote suppliers and contractors to mutually acknowledge corporate social responsibility, and requires suppliers to develop awareness and to collaborate with us in terms of sustainable development of the supply chain, on top of being committed to social responsibility.

### Signing Social Responsibility Commitment



2019 Goals	Progress of Target Completion	2020 Goals
Signup rate of existing suppliers grows by 10% over the previous year.	Signup rate of existing suppliers grew by 20% (target achieved).	Signup rate of existing suppliers grows by 10% over the previous year.
100% of new suppliers sign.	100% of new suppliers signed (target achieved).	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. Besides listing supplier/contractor quality, costs, service standards, environmental protection, work safety and health, and technologies into the evaluation items to ensure their quality and safety and health, we also require suppliers and contractors to make improvements on deficiencies in the spirit of P-D-C-A. In addition, we also provide necessary guidance to make ECOVE's supply chain stay at optimized competitiveness to mitigate the risk of operational disruption.

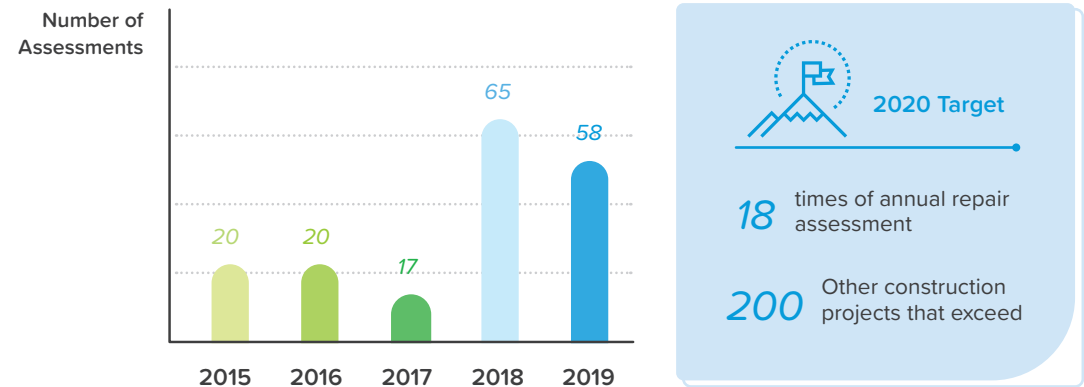
### Supplier Audit / Evaluation Items



The Quality Assurance and Safety and Health Office will undertake onsite audit and coaching at each engineering 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. All contracts have listed the "in case the supplier breaches its CSR policy, and causes significant influences on the environment or society, the Company may terminate the contract at any time" clause. Also, assessment is made for suppliers after the completion of each contract. The supplier evaluation is conducted during annual repair at each plant. Since 2018, the scope of supplier evaluation has been expanded to include any construction whose project amount reaches NT\$2 million or more. For any non-compliance or defect found in the evaluation or assessment results, the Company will facilitate the vendor to improve. In case improvement has not been made, the vendor will be listed as an unqualified vendor. Upon review and confirmation from the responsible manager, it will be included on the "List of Unqualified Vendors" and contract will be terminated. No unqualified vendor was found based on the results of the 2019 assessment.

In 2020, we plan to communicate and convey information on CSR and to reward and encourage high-performing vendors. 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: The supplier assessment is conducted during annual repair at operating facilities. The supplier evaluation was conducted at 10 plants 20 times during the first-half and second-half of 2015 and 2016. In 2017, assessments were conducted 17 times at eight plants (excluding Xindian and Shulin Plants) and at the Gangshan Plant during the second half.

Note 2: Starting from 2018, assessments were conducted at nine plants, including the Gangshan Plant, 18 times during the first-half and second-half of the year. At the same time, assessments were also conducted for construction projects that exceeded NT\$2 million.

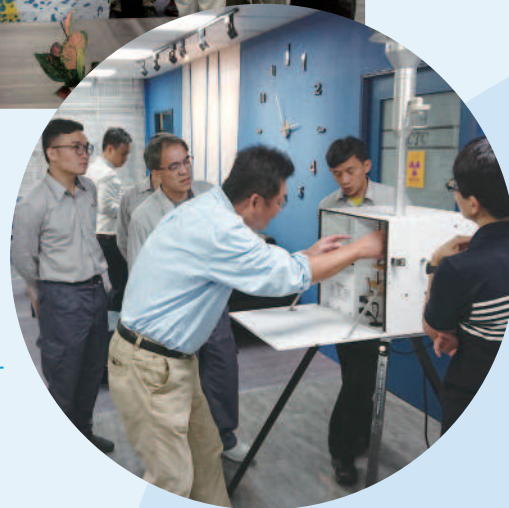
Note 3: As the incineration plant improvement project was completed in 2019, the number of construction projects with a contract value of over NT\$2 million was reduced.



## Contractor Visit and Engagement

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 2019, we conducted on-site visits and engagement activities for key materials suppliers/contractors to learn their internal operations and quality control on different occasions. 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. To keep track of and manage vendors' sustainability risks, ECOVE organized the third-party vendor forum and invited major construction project contractors or technical service providers to share their requirements and experience in the following five aspects: supply chain management, occupational health and safety, labor rights and human rights management, environmental protection, and business management. During the event, we also held the Excellent Quality and Safety Award Ceremony to demonstrate our encouragement and expectations to vendors. We spread the benefits of CSR at the forum, hoping to guide our vendors to the future of sustainable development.



Vendor visit and technical exchange

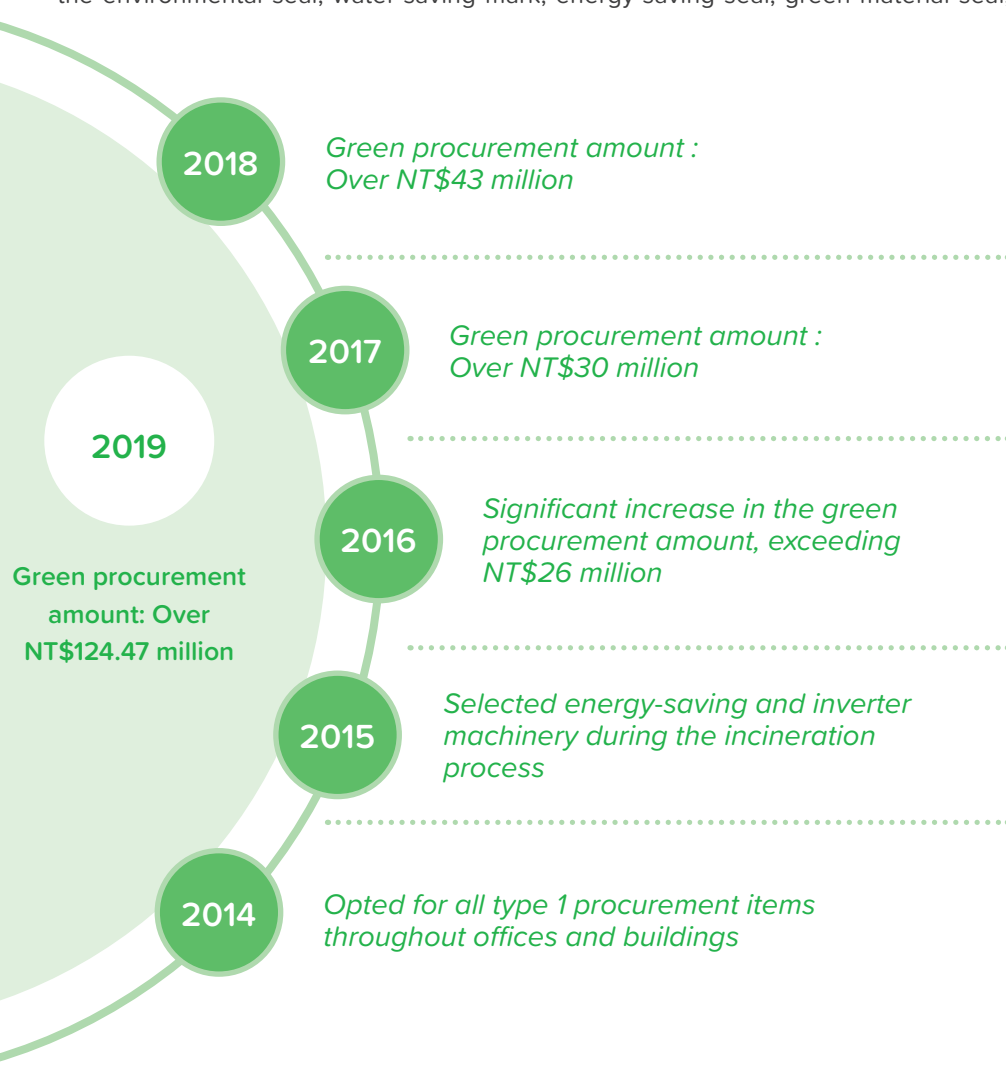
Third-party vendor forum



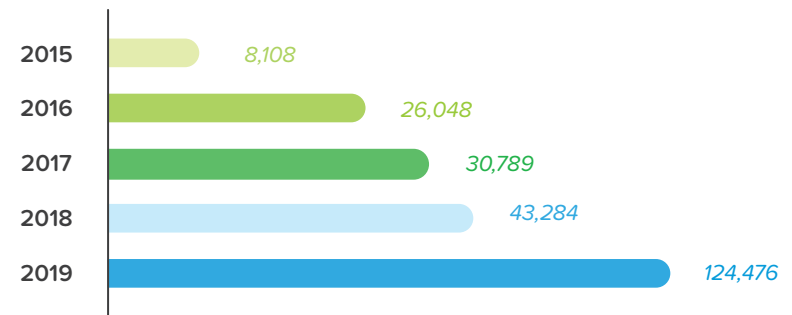
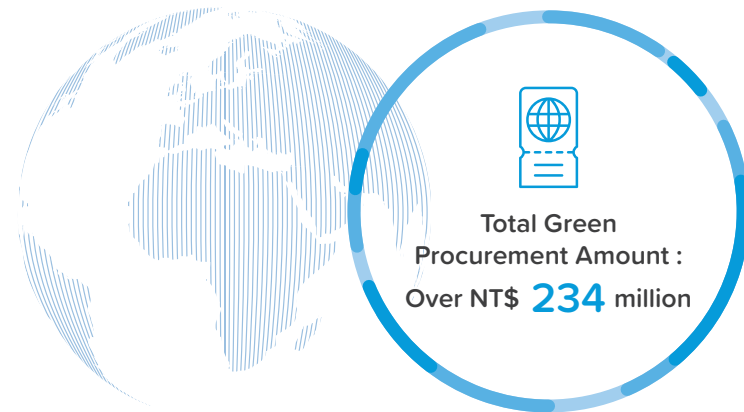
## Green Procurement Performance

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 the environmental seal, water-saving mark, energy-saving seal, green material seal,

type 2 environmental protection product or carbon footprint seal to better conserve energy, reduce carbon, and to save our planet. In 2019, in addition to selecting variable-frequency equipment, highly energy-efficient transformers, and LED lighting, ECOVE Waste Management Corp.'s waste clearing department replaced vehicles with more eco-friendly tractors in line with the new environmental protection standards under the Air Pollution Prevention Act. ECOVE Solar Energy Corporation also invested in the establishment of solar photovoltaic plants and selected energy-efficient solar cell modules and converters based on the government's renewable energy policy. The total amount of green procurement exceeded NT\$124.47 million.



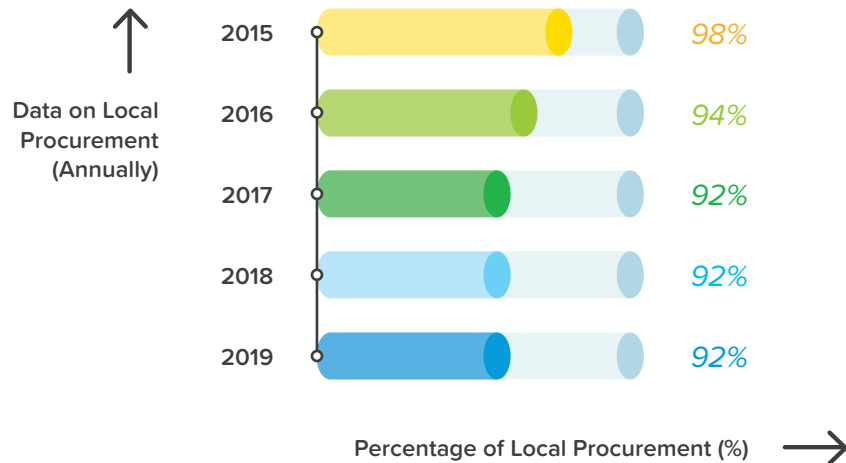
## Green Procurement Amount



Unit : NT\$1,000

## Local Procurement Performance

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 and Management, 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.



- Note 1: Local procurement is defined as purchases using the New Taiwan Dollar (NTD) with local vendors in Taiwan.
- Note 2: The percentage of local procurement is affected by major and minor annual repair (minor repair in every three years and major repair in every six years) of major machinery (original components and technicians).
- Note 3: Since the incineration plant improvement project was undertaken in 2017, to achieve better efficiency, new types of equipment and materials from original manufacturers were selected. Therefore, the percentage of foreign procurement of equipment and materials has increased, and the percentage of local procurement has decreased slightly. In 2018, the improvement project was gradually completed, and the foreign procurement of equipment and materials decreased; however, the innovative R&D department tested new technologies to clean fly ash in furnaces, introduced foreign mobile-type cleaning ash by explosive technology from the original manufacturer, and purchased the fixed-type cleaning ash by explosive technology. Therefore, the percentage of local procurement in 2018 was close to that in 2017. The aforementioned improvement plan came to an end in 2019, and outsourced equipment decreased.

## Most reliable

### ECOVE was ranked among top 5% in the Corporate Governance

Evaluation by the Financial Supervisory Commission for six consecutive years. Results of the 6th Corporate Governance Evaluation co-organized by the TWSE and TPEX indicated that ECOVE was ranked among the highly sought-after top 5% among all 1,600 companies that were listed on the TWSE and the TPEX. In addition, since the implementation of the Corporate Governance Evaluation, only 25 listed companies managed to rank in top 5% for six consecutive years. ECOVE was also named top 10% among the listed companies on the TPEX for "non-financial and non-electronics companies with net worth over NT\$10 billion" for a second year.

Seeing "the most reliable provider of industry-leading 'resource cycling' services" as our mission, we have placed among top 5% in the Corporate Governance Evaluation for six years in a row, demonstrating ECOVE's legal compliance and self-discipline. Our determination and performance in the voluntary enhancement of corporate governance have won countless positive recognition. ECOVE is committed to continuous enhancement in governance and information transparency, creating a robust operating system, maintaining shareholders' equity, pursuing environmental and sustainable business development, and to continuously living up to our brand of being "the most reliable."



ECOVE Chairman, attending the 6th Top 5% in Corporate Governance Award and accepting the award



# 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.

Integrity Management

Innovations and Sharing

Most Reliable



43

54

58

• Performance Highlight

### Excellence Award

1st National Corporate Environment Protection Award from the Environmental Protection Administration Gold

### Outstanding Environmental Protection Business

Outstanding Environmental Protection Business Award from the Ministry of Science and Technology

### Circular Economy Leadership Award

Taiwan Corporate Sustainability Awards from the Taiwan Institute for Sustainable Energy Circular Economy Leadership Award

### Highest Level of Circular Economy Verification






Highest level of 2018 BS 8001 Circular Economy verification from BSI Taiwan

### NO.1

Taiwan's first company to obtain the US Green-e® Energy certification (Internationally accepted renewable energy certification)






# Climate Change and Resource Utilization

## Climate-related Risk Analysis for Energy from Waste (EfW)

Sources of Risk	Scope of Impact	Business Impact	Management Strategies
 High Temperature	The efficiency of cooling system in incinerators will decrease when the room temperature rises to a certain degree.	Power efficiency will decrease and the loading on air conditioning system will increase.	Respond by increasing the flow of chilled water and heat dissipation capacity. Relevant water restriction process principles will be amended or water storage volume within the plants will be increased in case of extreme rainfall leading to water outage.
 Typhoons	Lead to relatively unstable power supply system during the power transmission routes.	Disconnect with Taipower Company or to decrease the boiler load.	Conduct five-step processes according to the Typhoon Standardized Operating Procedures, including collecting information on typhoon movement, setting up a typhoon prevention control center, confirming typhoon prevention works, confirming power supply and disconnection, and post-disaster relief.
 Rainstorm	Lead to relatively unstable power supply system during the power transmission routes.	Leads to disconnection or equipment abnormalities, and the instantaneous current may cause damages to computer systems.	Weigh station manager will immediately notify the control center upon hearing thunder strike or lightning based on the "Weigh station and control center emergency response procedures during rainstorm"; test whether the incinerator is operating normally, and immediately notify repair units for maintenance and repair in case of abnormality.
 Floods	Paths between facilities are cut off and floods occur at the plants.	On-duty personnel could not hand over tasks on site and floods at the plants lead to equipment damage.	When ponding water occurs outside the plant, onsite personnel will notify the on-duty managers and head of Operations and Management based on Flood Standardized Operating Procedures; respond accordingly or conduct disaster relief based on actual conditions; in case of equipment damage, emergency repair will be conducted if needed.
 Droughts	The water company may lower the pressure of water supply or conduct sectional water outage.	Incinerators may need to reduce loading or even stopped due to lack of water.	When three-tiered water restriction is announced, emergency response measures will be taken based on Water Restriction Standardized Operating Procedures; maintain all levels of liquids in all water storage tanks at the sites and seek for external water sources.

In response to the impacts of global climate change, ECOVE assesses risks and opportunities arising from climate change for the three core business activities. We regularly identify sources of risk and the scope of their impacts, and establish various responsive procedural standards to lower the operating impacts from the risks as well as to prevent operator accidents.

## Climate-related Risk Analysis for Renewable Energy

Sources of Risk	Scope of Impact	Business Impact	Management Strategies
 High Temperature	High temperature and heat will reduce the efficiency of solar power generation.	Lead to the low efficiency of solar power generation and low revenue generated therefrom.	In the preparation for the construction of a solar power system, it is necessary to evaluate the distance between the solar panels and the building to improve the effect of heat dissipation. If the maintenance personnel detect any abnormalities in solar power generation via the monitoring system, they will notify the repair unit for inspection or repair.
 Typhoons	Lead to relatively unstable power supply system during the power transmission routes.	Lead to exceptions, disconnection, or damage to the solar power generation system or solar panels.	Conduct five-step processes according to the Typhoon Standardized Operating Procedures, including collecting information on typhoon movement, setting up a typhoon prevention control center, confirming typhoon prevention works, confirming power supply and disconnection, and post-disaster relief.
 Rainstorm	Lead to relatively unstable power supply system during the power transmission routes.	Lead to exceptions, disconnection, or damage to the solar power generation system or solar panels.	According to the emergency response to natural disasters, the maintenance personnel will determine whether the amount of power generated is normal via the real-time solar power generation monitoring system, and notify the repair unit for inspection or repair in case of any abnormalities.
 Floods	Lead to relatively unstable power supply system during the power transmission routes.	Lead to exceptions, disconnection, or damage to the solar power generation system or solar panels.	According to the emergency response to natural disasters, the maintenance personnel will determine whether the amount of power generated is normal via the real-time solar power generation monitoring system, and notify the repair unit for inspection or repair in case of any abnormalities.
 Droughts	Droughts will reduce the efficiency of solar power generation.	Solar panels are dirty, leading to the low efficiency of power generation and low revenue generated therefrom.	In the preparation for the construction of a solar power system, it is necessary to evaluate the distance between the solar panels and the building to improve the effect of heat dissipation. It is also important to adjust the frequency of solar panel cleaning and other cleaning methods. If the maintenance personnel detect any abnormalities in solar power generation via the monitoring system, they will notify the repair unit for inspection or repair.



# Energy from Waste (EfW)

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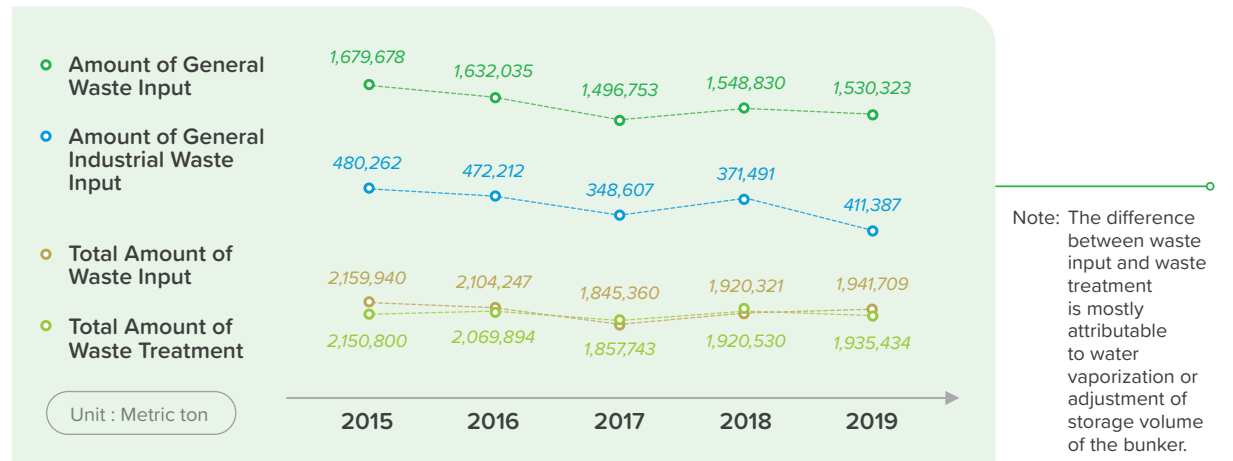
To effectively manage incoming waste, ECOVE divides waste into three categories, general waste, hazardous waste, and general industrial waste that does not require recycling or reusing.

## Waste Treatment Performance

After mining and processing, natural resources can bring convenience to human life. Nevertheless, the wastes produced from using these products have become environmental problems that we need to deal with in our daily lives. With the limited living space on our planet, if all waste is treated by landfill, it not only causes various pollution that impact and influence the quality of human habitation, but its anaerobic reaction will also produce an enormous amount of methane, resulting in greenhouse effects 25 times greater than that of carbon dioxide (IPCC AR4). For ECOVE Environment Service Corp. (ECOVE ESC), a subsidiary of ECOVE Environment Corp., owning an energy with high environmental effectiveness will not only reduce the use of fossil fuel from power companies, but it would also prevent the environmental problems created from garbage landfill exposure. Since all waste to energy plants operated and managed by ECOVE ESC strive to properly incinerate garbage and to achieve optimized utilization of the thermal heat generated by effectively turning the heat into power, we can transmit the power to end-users via power company. Besides achieving the greatest power generation efficiency through garbage, ECOVE ESC's optimized Operations and Management and technology can also strive to enhance the surplus value from solid waste, exhaust gas, wastewater, and secondary pollutants to achieve complete utilization of various waste.

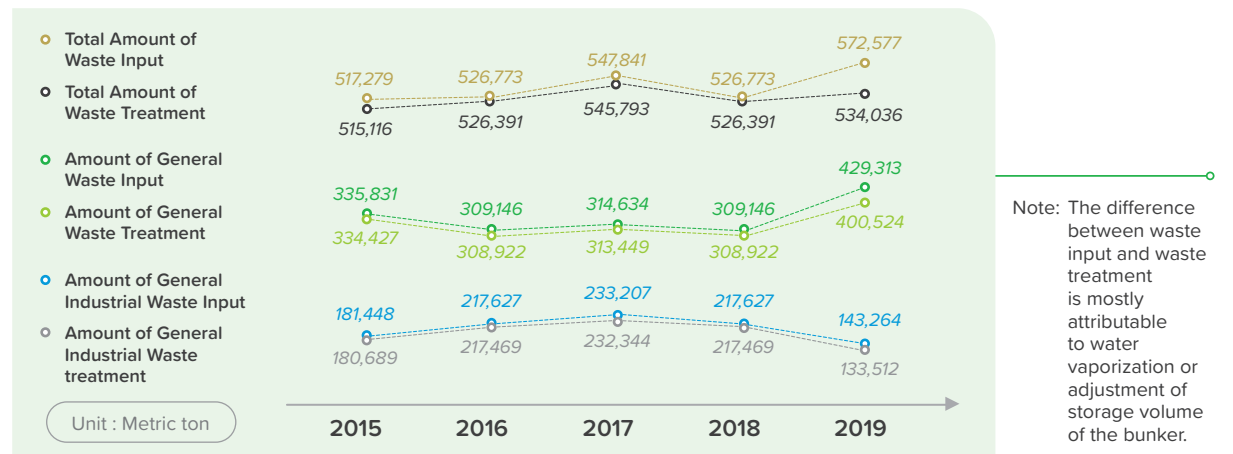
Currently, ECOVE ESC manages and operates seven waste to energy plants. The total waste received by these plants amounted to 1,941,709 metric tons in 2019. As the total waste input for 24 waste to energy plants throughout Taiwan was 6,530,079 metric tons in 2019, ECOVE ESC accounted for 30% of all waste input in Taiwan. In particular, the volume of general waste amounted to 1,530,323 metric tons, accounting for 79% of all waste input in ECOVE ESC, while the volume of general industrial waste amounted to 411,387 metric tons, accounting for 21% of all waste input in ECOVE ESC. According to the 2020 statistical data from Waste Management Office of Environmental Protection Administration (EPA), Taiwanese citizen produces approximately 1.138 kg of waste on a daily basis. Therefore, ECOVE ESC services approximately 3.68 million people as well as receives and treats waste from 16,500 institutions.

## Total Amount of Waste Input and Treatment in ECOVE ESC's Waste to Energy Plants (in Metric Ton)



Besides Taiwan, the general waste throughout Macau is treated by our subsidiary, SINOGAL, which serves a population of approximately 670,000. The total amount of waste input in waste incinerators operated and managed by SINOGAL amounted to 572,577 metric tons in 2019. In particular, general waste amounted to 429,313 metric tons, accounting for 75%, while general industrial waste amounted to 143,264 tons, accounting for 25%. Based on the average data from the past five years, the annual average total input was 538,249 metric tons, while the total amount of treatment was 529,545 metric tons.

## Total Amount of Waste Input and Treatment in SINOGAL's Waste Incinerators (in Metric Ton)





## Power Generation and Power Retail

Cumulatively, the waste to energy plants operated by ECOVE ESC has sold 932,417 MWh to the power company in 2019. In other words, approximately 82% of the total power generated can be transmitted to Taipower Company's power grid, while the remaining 18% would be used for operation by the waste to energy plants. Based on data from Taipower Company, the average household power consumption in Taiwan and Macau were 292 kWh and 430 kWh per month, respectively, in 2019. Therefore, we could supply the year-round general power consumption for approximately 266,100 and 33,900 users in Taiwan and Macau respectively.

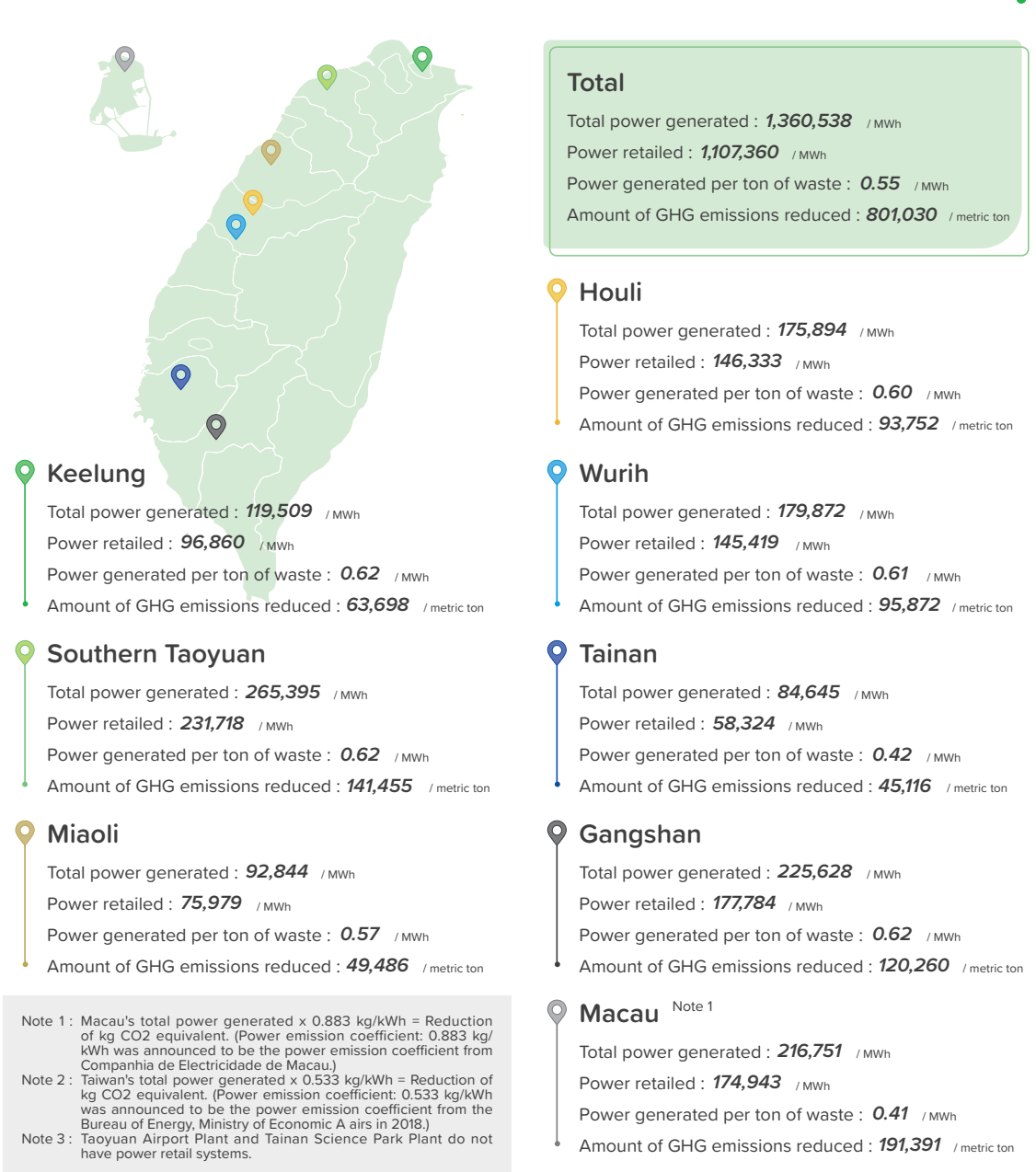
The reduction in carbon dioxide (CO2) emissions from our power output was calculated to be approximately 800,000 metric tons of CO2e, equivalent to reducing approximately 320,000 metric tons of coal combustion (based on the calculation that 1 metric ton of coal combustion produces 2.5349 metric tons of CO2e), and also equivalent to the volume of CO2 that can be absorbed by 2,059 Daan Parks in a year (based on the calculation that Daan Park can absorb 389 metric tons of CO2 in a year). Moreover, based on the 2010 research, the Forestry Bureau, Council of Agriculture had estimated that the fixed volume per hectare of forest can absorb 9.0 metric tons. Therefore, our 2019 performance was equivalent to planting approximately 80,912 hectares of forest.

The hearth and combustion system improvement at Gangshan Plant at the first stage of rectification (from July 2017 to November 2017) was completed, increasing the operation rate from 73% to 100%. It effectively relieved the pressure of waste disposal in Kaohsiung City. From staffing and seamless integration of operation and maintenance to equipment evaluation and improvement through patented technology and intelligent systems, ECOVE Environment Service Corp. spared no effort to operate the plant in a professional manner, significantly increasing the schedule of maintenance and equipment efficiency. In 2019, the waste treatment capacity (362,619 metric tons), power generation (225,628 MWh), and electricity sales (177,784 MWh) all reached a record high over the past 10 years. Such results were highly recognized by the owner, Taiwan Sugar Corporation.



ECOVE executive receives a certificate of appreciation from the owner, after the revamping of Gangshan plant which lead to a 10-year recordhigh in treatment amount, power generation, and power sales.

## Power Generation and Power Retail in Energy from Waste Plants in 2019



## Autonomous Organizational Inventories

ECOVE ESC regularly conducts organizational greenhouse gas autonomous inventories for the incineration plants it operates. With 2014 set as the base year, the amount of waste treatment in each of its incineration plants in 2019 was lower than that in the base year (except for Taoyuan Airport Plant, whose GHG emissions increased with an increase in the amount of waste treated), and

the GHG emissions have all decreased accordingly. On average, 22% of GHG emission has been reduced from each plant. For primary sources of emissions, we have set the annual target of reducing total CO<sub>2</sub> emissions by 1% from the base year.

### GHG Emission Reduction Results in Incineration Plants Operated by ECOVE ESC (Metric Ton/CO<sub>2</sub>e)

Plant	2014 ( Base Year )				2019				Reduction Results
	Scope 1	Scope 2	Total GHG Emissions	Biomass Emissions	Scope 1	Scope 2	Total GHG Emissions	Biomass Emissions	Reduction Results
Keelung Plant	90,278	152	90,430	97,726	60,852	127	60,979	110,558	29,451
Southern Taoyuan Plant	284,248	230	284,478	209,035	213,822	226	214,048	202,630	70,430
Taoyuan Airport Plant	4,381	1,596	5,977	4,364	6,327	2,198	8,525	6,441	-2,548
Miaoli Plant	86,377	55	86,432	75,120	75,604	91	75,695	80,262	10,737
Houli Plant	230,930	200	231,130	130,711	186,361	82	186,443	144,938	44,687
Wurih Plant	116,263	242	116,505	126,182	96,628	415	97,043	147,694	19,462
Tainan Plant	120,557	243	120,800	118,182	83,473	539	84,001	113,133	36,799
Tainan Science Park Plant	16,138	2,726	18,864	6,810	14,008	2,803	16,811	5,987	2,053
<b>Total</b>	<b>949,172</b>	<b>5,445</b>	<b>954,617</b>	<b>768,131</b>	<b>737,075</b>	<b>6,481</b>	<b>743,545</b>	<b>811,643</b>	<b>211,071</b>

Note 1 : Biomass emissions equivalent are calculated based on waste sampling analysis.

Note 2 : Reduction results = Total GHG emissions equivalent in 2014 - Total GHG emissions equivalent in 2019.

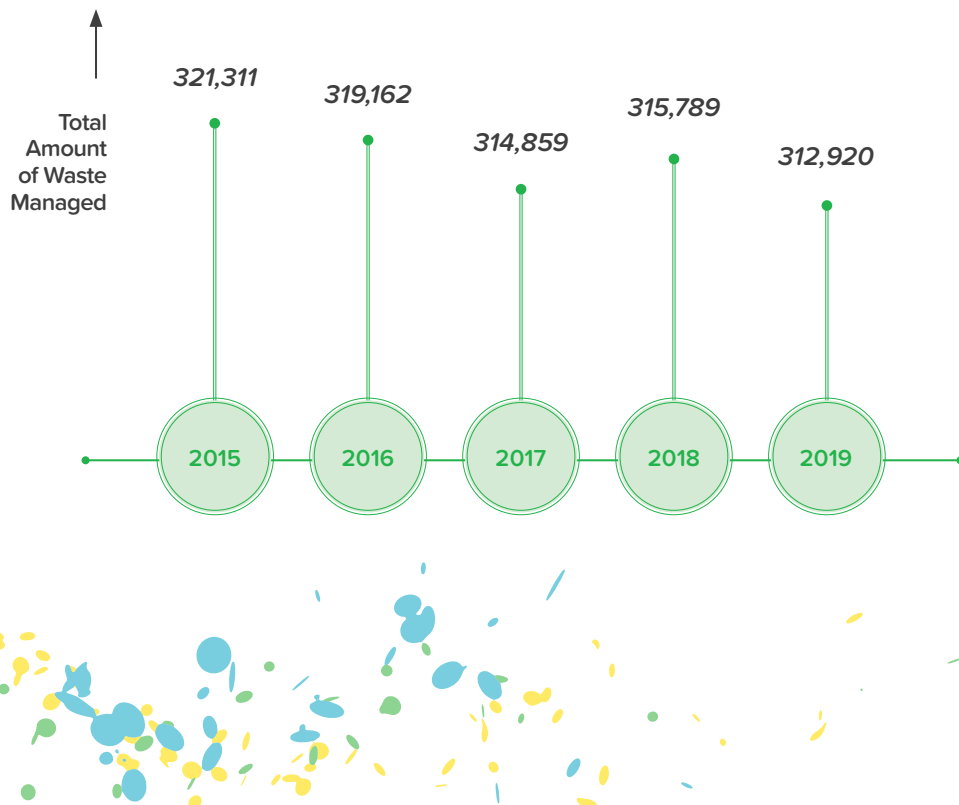
Note 3 : 2019 emissions coefficient is from the 2018 power emissions coefficient of 0.533 kg CO<sub>2</sub>e/kWh announced by the Bureau of Energy, Ministry of Economic Affairs, while the GWP value is IPCC AR4.

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

## Responsible Generation

The total amount of waste managed by ECOVE's subsidiary, ECOVE Waste Management Corp. (ECOVE WMC) in 2019 was 312,920 metric tons, accounting for 29% of all waste that was outsourced to private institutions from domestic large-scale municipal waste incineration plants. To effectively manage the quality of waste, ECOVE WMC monitors the source of the waste and undertakes onsite coaching and visit to understand their operating processes, waste-producing qualities, quantities, and storage. ECOVE WMC also advocates for environmental protection laws and key points of waste input management at the incineration plants related to waste outsourced treatment. This is to ensure that the sources can provide waste that meets the operating requirement of incineration plants to stabilize the treatment efficiency of the incinerator plants and to prevent processing risks.

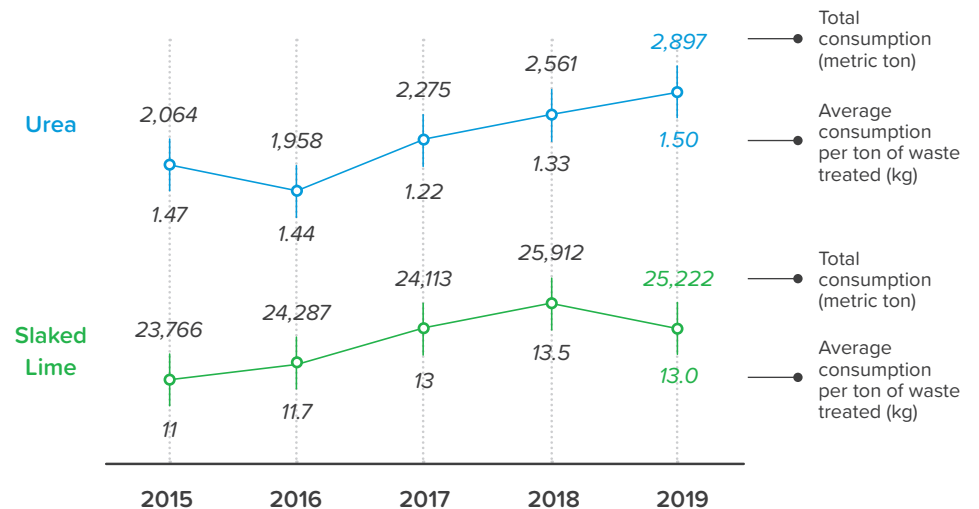
### Total Amount of Waste Managed by ECOVE WMC ( in Metric Ton )



To prevent emissions of air pollutant from becoming environmental impacts from waste incineration, continuous monitoring stations have been installed at exhaust-emitting tubes at all incineration (waste to energy) plants operated by ECOVE ESC pursuant to the laws. Seven items are continuously monitored, including exhaust gas flow rate, oxygen content, sulfur oxides, nitrogen oxides, hydrogen chloride, carbon monoxide, and opacity. Information from the exhaust emission monitoring system is uploaded to the Environmental Protection Administration immediately and available for the public to search. Currently, information on Keelung Plant, Southern Taoyuan Plant, Miaoli Plant, Houli Plant, Wurih Plant, and Tainan Plant are available. In addition, onsite scheduled detection is conducted monthly or quarterly, and items of which include sulfur oxides, nitrogen oxides, hydrogen chloride, carbon monoxide, particulate pollutants and dioxin.

Not only does ECOVE ESC's operating competencies allow high levels of waste utilization, but we also strive to comprehensively control the quality of various pollutants emitted during waste incineration at the waste to energy plants. The amount of urea used per unit of waste increased in 2019 compared to that in the recent five years. The main reason for the increase was that we conducted a test to reduce NOx emissions by increasing the amount of urea used per unit of waste (used in selective non-catalytic reduction, SNCR) to meet the EPA's air pollution reduction target by 2024. We will continue to study the improvement plans for air pollution that allow us to reduce air pollution and the use of urea at the same time. In terms of unit consumption rate of slaked lime, the consumption has increased slightly due to the increase in the lower heating value of the waste. In the future, we will increase the efficiency of chemical utilization and decrease the chemical consumption per ton of waste.

### Chemicals and Slaked Lime Usage at the Incineration Plants

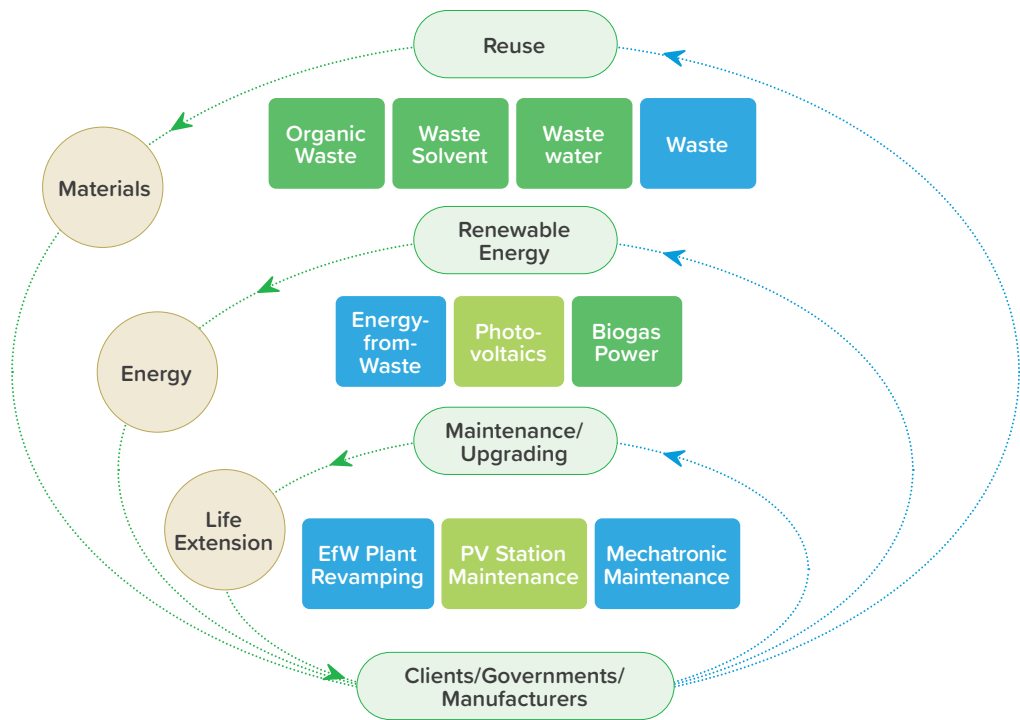


# Circular and Low-carbon Economy

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In line with the government's sustainable development policy, ECOVE helps to commercialize and popularize the emerging recycle and reuse technologies. We help to reduce costs by enhancing the operating efficiency of machinery. To grasp the initiative of new business development, a "Technology R&D Team" has been set up in ECOVE's Market Development Department, which evaluates various recycle and reuse technologies. Therefore, we have set PET bottle recycling, reclaimed water, waste solvent recovery, biomass, and waste acid and alkali recovery as key development areas.

- Waste Management and Incineration
  - Recycling and Reuse
  - Renewable Energy
- Energy, Materials, and Life Extension  
→ Resources (Waste)

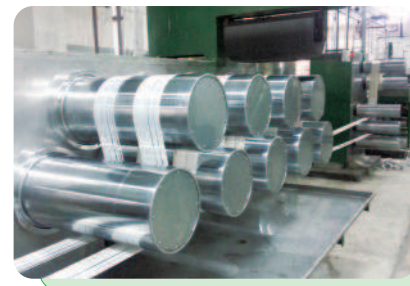


Business model of ECOVE's resource cycling

# PET Bottles

BoReTech Co, Limited, an ECOVE reinvestment company, has a series of recycling and cleaning system manufacturing and cleaning solution planning competency specifically for PET bottles, which helps to build a highly effective recycling and cleaning equipment. To provide well-rounded solutions for customers, we have pioneered the industry in launching B2B PET bottle recycling and cleaning production line and chemical fiber-grade PET bottle recycling and cleaning production line. Through user-oriented interface and professional whole plant planning, we develop products with stable function and decent quality, significantly reducing the production cost of PET bottle recycling and cleaning facility and reducing production loss while increasing the quality of the products. In the face of domestic and international legislation to ban plastic products, this technology of re-manufacturing polyester into functional fiber can realize the concept of resource cycling.

<b>Geographical Scope</b>	Over 172 cleaning lines Operate in 33 countries and regions around the world
<b>Scale of Recycling as of 2019</b>	Have the PET recycling capacity of approximately 3.4 million tons
<b>Product Quality as of 2019</b>	B2B grade : an annual capacity of approximately 550,000 tons; bottle chips produced can be used as raw materials for producing PET bottles. Chemical fiber grade : an annual capacity of approximately 2.55 million tons; chemical fibers produced can be used as raw materials for functional clothing. Sheet grade : an annual capacity of approximately 300,000 tons



PET-Reused Chemical Fiber



Working Line for PET Bottles Cleaning



## Waste Solvents

To enhance resource cycling usage rate and achieve sustainable living environment, ECOVE Solvent Recycling Corp. was established in 2018 to provide purification and reuse 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. ECOVE Solvent Recycling Corp. treated approximately 1,400 tons of waste solvents in 2019. It continued to improve treatment technologies and adopted distillation, which generated approximately 60 metric tons of carbon dioxide emissions, a decrease of 973 metric tons of carbon dioxide emissions (equivalent to carbon dioxide emissions absorbed by three Daan Parks) from 1,033 metric tons of carbon dioxide emissions generated by incineration.

ECOVE expects to recycle approximately 6,700 tons of waste solvents every year in the future and concentrates them into industrial-grade raw materials to be returned to the market supply chain. Not only will this greatly reduce losses of resources from earth, but it will also reduce carbon dioxide emissions by approximately 4,900 metric tons every year. In the second half of 2019, we replaced heavy oil fuel with natural gas, which reduced carbon dioxide emissions by approximately 59 metric tons according to the calculations.



— Appearance of ECOVE Solvent Recycling Corp.

## Organic Waste

Driven by the African swine fever and a trend in circular economy, ECOVE has integrated relevant technologies based on the response characteristics of biomass to assist the government of Macau with food waste recycling since 2018. In 2019, we treated about 422 tons of food waste to make organic fertilizers, reducing CO<sub>2</sub> emissions by about 108 metric tons (treating food waste from incineration to compost reduced carbon emissions by 256 kg CO<sub>2</sub>/ton,  $(422 \times 256) / 1000 = 108$  metric tons; source: Recycling Website of Department of Environmental Protection, New Taipei City at <https://crdrubbish.epd.ntpc.gov.tw/dispPageBox/RRN/RCCP.aspx?ddsPageID=RCCFSR1>). Organic fertilizers are used to plant flowers and trees for ornamental purposes, realizing a circular economy.



— Kitchen waste (top) is treated through new technology to make organic fertilizers (middle); organic fertilizers (bottom) are packaged for public use.



## Water Resources

ECOVE's water resource projects encompass three types of key works, including wastewater treatment, river 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 further the reuse of water resources.

Note 1: The currently completed first-phase construction can treat 23,000 metric tons of sewage per day. After the completion of the second-phase construction, it can treat 46,000 metric tons of sewage per day.

### Climate-related Risk Analysis for Renewable Energy

Type of Work	Item	Technicalities	Current Performance	Expected Performance
Wastewater Treatment	Linkou Water Resource Center	1. Treat domestic sewage 2. Remove garbage and suspended solids in water through preliminary treatment and primary treatment 3. Domestic microorganisms through biological treatment (secondary treatment) to remove water-soluble pollutants 4. Produce reclaimed water through simple tertiary treatment for internal / external use (Linhai Plant produces reclaimed water through advanced treatment)	23,000 metric tons of sewage treated per day	46,000 metric tons of sewage treated per day <sup>Note 1</sup>
	Zhongli Wastewater Sewage System (BOT)		Under construction	156,800 metric tons of sewage treated per day
	Linhai Wastewater Treatment Plant		Under construction	55,000 metric tons of sewage treated per day
River Rehabilitation	New Taipei City Gravel Water Treatment Plant	1. An on-site treatment facility for treating the quality of freshwater rivers 2. Sewage flows through the gravel area underground and gets aerated so that microorganisms adhere to gravel and form a biofilm, consuming pollutants in water 3. Set up parks and observation corridors on the ground to create a space for ecological conservation, recreation, and education	106,700 metric tons of sewage purified per day	-
	Zhonggang Water Resource Center	1. Treat industrial wastewater discharged to Zhonggang Main Drainage 2. Remove pollutants in water using physical methods such as dissolved air flotation, filtration, and activated carbon adsorption	30,000 metric tons of sewage treated per day	-
Recycling	Fengshan River Reclaimed Water Plant	1. Purify discharged water after treatment to industrial water grade 2. Further remove pollutants in reclaimed water through advanced membrane filtration technology and set a specific removal unit (e.g., boron and ammonia) according to the users' water quality requirements	Produce 45,000 metric tons of reclaimed water per day	-
	Linhai Reclaimed Water Plant		Under construction	Produce 33,000 metric tons of reclaimed water per day



Linkou Water Resource Center



Zhongli Wastewater Sewage System (BOT)



Linhai Reclaimed Water Plant



New Taipei City Gravel Water Treatment Plant



Zhonggang Water Resource Center



Fengshan River Reclaimed Water Plant

To ensure that sewage is treated in compliance with the idea of environmental protection and relevant laws and regulations, measures such as water quality analysis and automatic monitoring are taken to keep track of the effect of daily sewage treatment and water quality in real time and then make necessary adjustments on-site in hopes of strengthening the effectiveness of sewage treatment.

### Daily Water Quality Analysis

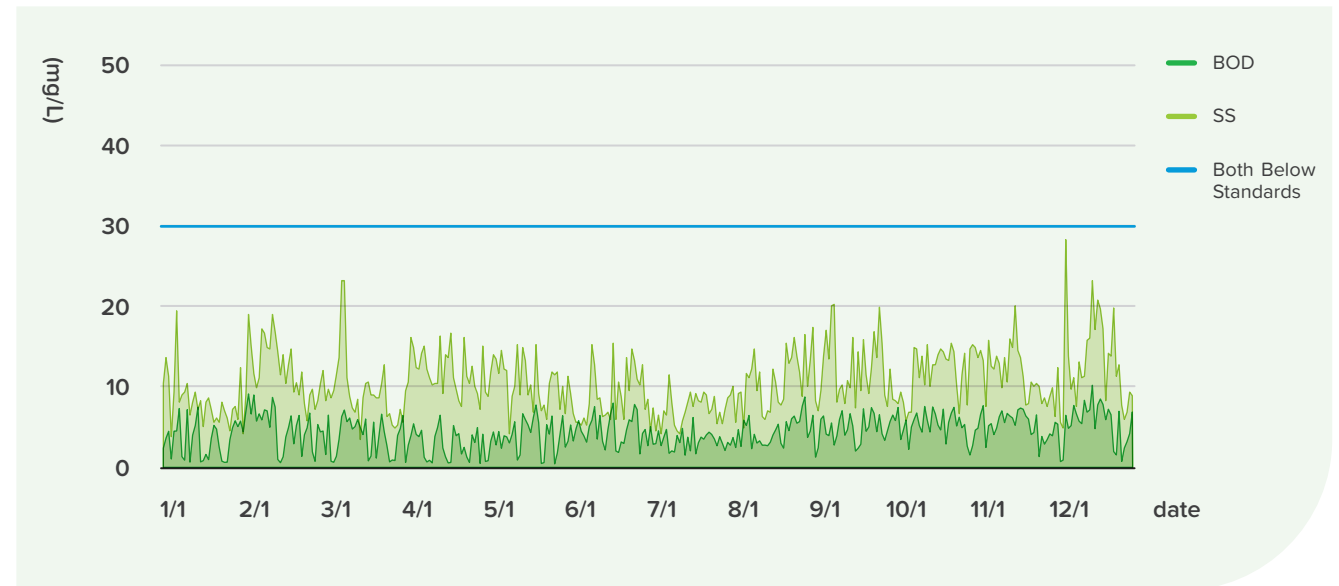
Operators of sewage plants conduct daily sampling of unit water quality and send it to the laboratory on-site for the laboratory personnel to conduct water quality testing and analysis. The analysis results are handed over to the operation managers, who are responsible for determining the system performance and adjusting the operation based on the analysis results.

### Automatic, Continuous Monitoring of Effluents

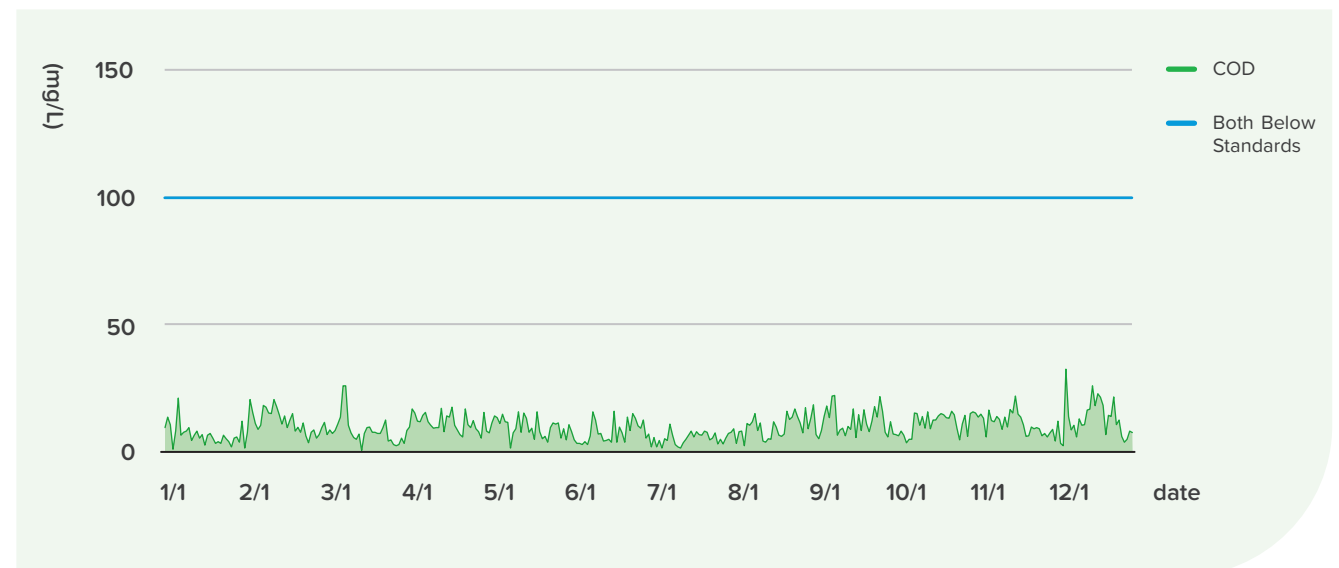
Although the laboratory water quality testing and analysis delivers a more accurate unit status and water quality data, it takes longer time. To have immediate control of the quality of effluents, an automatic, continuous monitoring system is in place to quickly obtain less accurate water quality data through automated analyzers. These water quality data are provided for the operating units to make immediate responses and are also made available for the competent authorities and the public.

Through measures taken by the Linkou Water Resource Center, including water quality analysis and automatic, continuous monitoring, the effluents met and were lower than the statutory effluent standards in 2019, achieving the goal of environmental protection.

### BOD and SS of Effluents in 2019

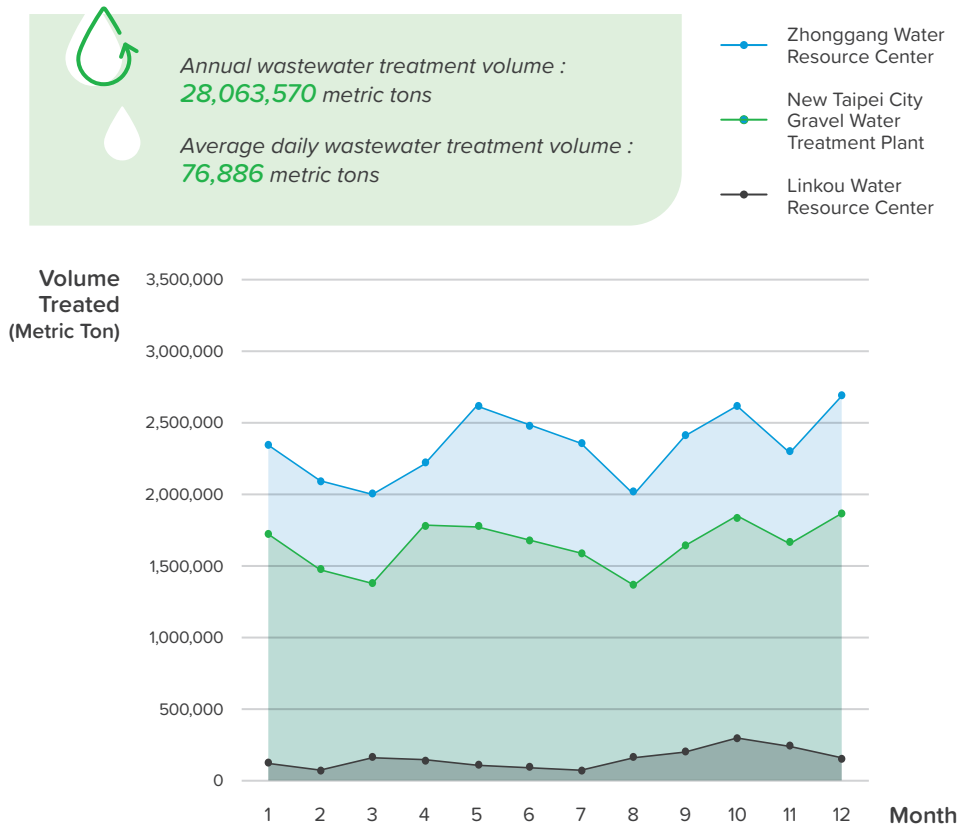


### COD of Effluents in 2019



Besides striving for environmental protection, ECOVE also focuses on maximizing the value of resources and sustainability during operation and maintenance. In 2019, Linkou Water Resource Center, Zhonggang Water Resource Center, and New Taipei City Gravel Water Treatment Plant cumulatively treated 28,063,570 metric tons of wastewater, and Linkou Water Resource Center also recycled 48,793 metric tons of discharged water for internal and external use. According to the estimation under the Technical Specifications for Sewage Treatment Facilities in Buildings formulated by the Ministry of the Interior, ECOVE serviced 110 million people per day, equivalent to treating the amount of sewage produced by the total population in Taiwan for nearly 5 days, and recycled the amount of water equivalent to the daily water consumption of 200,000 people; that is, while treating sewage, ECOVE also provided clean water for nearly 200,000 people a day as a substitute for tap water to promote the sustainable use of water resources.

### Wastewater Treatment Volume in 2019

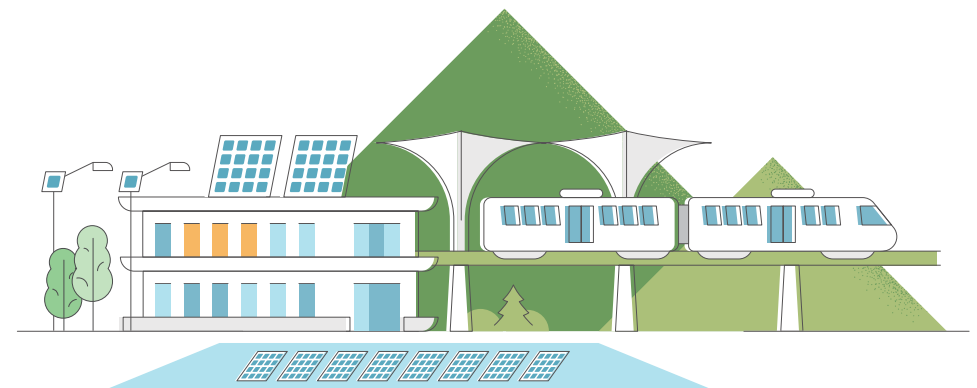


### Solar Power

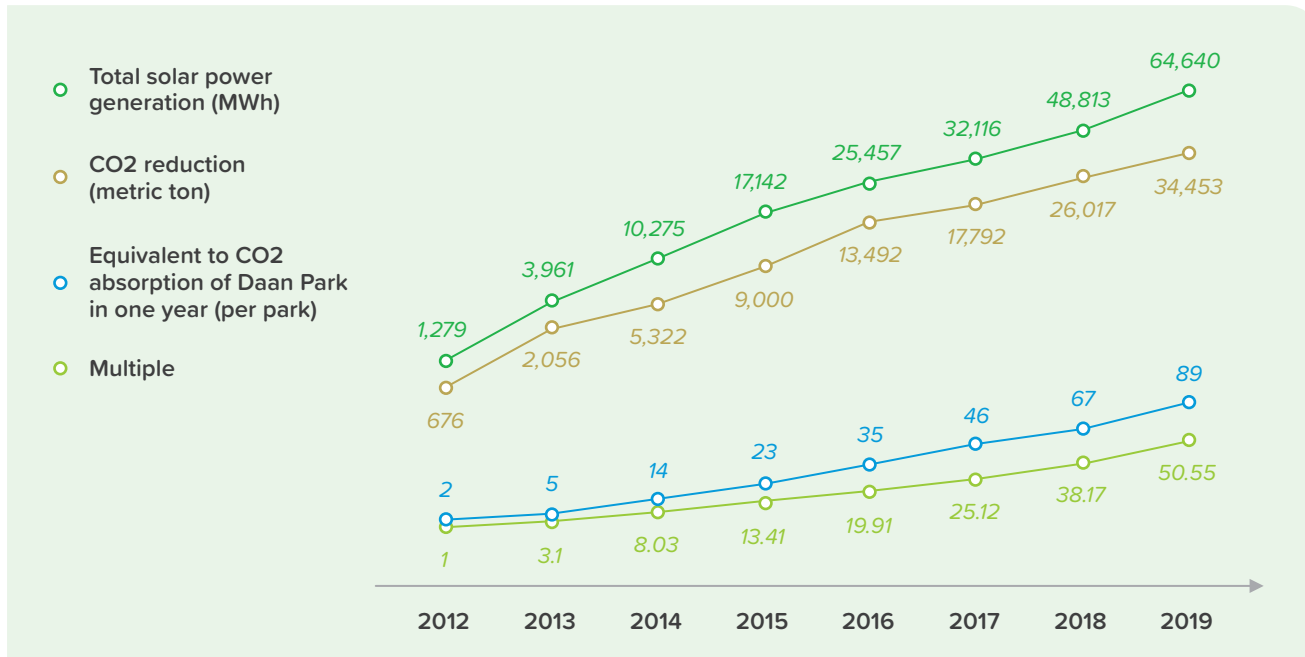
With the popularity of global climate change topics, ECOVE Solar Energy Corporation (ECOVE SEC) was established in 2011, with major businesses ranging from development, investment, building, to operation of solar power systems. As of 2019, we have won 18 medals including Gold, Silver, Bronze, and Special Award from the Kaohsiung City Government Photovoltaic Intelligent Building Certificate, two medals from the 3rd Top Solar System Awards from the Bureau of Energy, Ministry of Economic Affairs, one medal from the 4th Top Solar System Awards, one medal from the 5th Top Solar System Awards, one Gold Medal each from 13th Top 10 Enterprise and Manager Awards, and one medal each from the 2017 Outstanding Enterprise and Model Entrepreneurship Award.

Besides continuing to focus on the development of solar power industry, with strong support from parent company, ECOVE (CTCI), ECOVE SEC is also committed to the installation and Operations and Management of solar power systems with solid engineering planning and execution competency, as well as high-quality manufacturing competency. As of 2019, many project installations were completed with major partners (THSR, Kaohsiung MRT, Taipei MRT, Civil Aeronautics Administration, Port of Kaohsiung Taiwan International Ports Corporation, Ltd., and Tainan City Government and more). Results include: ground types: 14 modules at 19.5 MWp, rooftop types: 36 modules at 35.8 MWp, and floating types: four modules at 4.5 MWp. Cumulatively, the total installation capacity from the 54 modules amounts to 59.8 MWp.

In addition, ECOVE Solar Energy Corporation proactively participated in the green energy certification in the United States. It became Taiwan's first solar photovoltaic facility investor to participate in and obtain the certification of Green-e® Energy. Through impartial third-party certification, ECOVE Solar Energy Corporation will continuously improve the efficiency and quality of renewable energy, so as to provide highly efficient and quality renewable energy, making specific contributions to environmental protection.



## Total Power Generation from ECOVE SEC and Subsidiaries Each Year ( including Lumberton )



Note : The CO2e reduction coefficients are based on those announced by the Bureau of Energy, Ministry of Economic Affairs: 0.519 (2013), 0.518 (2014), 0.525 (2015), 0.530 (2016), 0.5 (2017), and 0.533 (2018 and 2019) kg CO2e/kWh, while the GWP value is IPCC AR4.

### Source of Waste

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 glass (74.2%), aluminum frames (10.3%), and batteries (4%). Waste should be disposed of by recycling businesses in accordance with the recycling and disposal regulations of the Energy Bureau, Ministry of Economic Affairs. The components of a module should be disassembled, classified, treated, and recycled; the classified materials are reused by different industries. The main components of a module bracket are aluminum alloy and steel.

Little aluminum is consumed during use. As long as it is not corroded, it can be recycled 100%. Mature technology is available for recycling waste electrical equipment such as junction boxes, inverters, electrical boxes, and cables. After decomposition, aluminum, copper, and other metals can be directly reprocessed while a certain amount of glass fiber can be recycled from composite materials by smashing. Plastics, circuit boards, and polymers commonly used in electrical equipment are hazardous waste that is hardly degradable and is generally disposed of by incineration.



#### Ground

New Jersey, USA

- Lumberton Solar Power Plant
- 14 projects
- 28.4 MWp



#### Rooftop

Taipei Rapid Transit Corporation Beitou Depot Power Generation

- 36 projects
- 26.9 MWp



#### Floating

Chianan Irrigation Association Project

- 4 projects
- 4.5 MWp



# Mitigating Environmental Impacts

## Energy and Resource Conservation

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ECOVE continues to install LED lighting in the administration buildings, process areas, and street lights at all plants every year. In 2019, Southern Taoyuan Plant turned on ventilation fans by zone (scheduled time) and adopted energy-free drain equipment for air compressors; Wurih Plant replaced cooling tower fan units; Tainan Plant adjusted the angle of the ACC fan blades and replaced the submersible pumps of external pumping wells. Approximately 525 metric tons of CO2e was reduced in 2019.

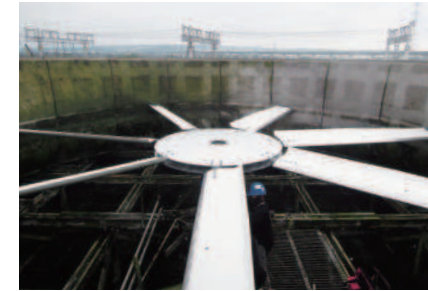
### ECOVE ESC Energy-saving Measures and Performance in 2019

Plant	Energy-saving Measures	Power Saving per Year after Improvement / kWh	Benefit per Year / NT\$	CO2e Reduction per Year / kg / CO2e
Keelung	Installed LED lighting at meeting rooms, central control rooms, and corridors of the administration building	24,650	47,821	13,138
Southern Taoyuan	Installed T5 lighting	5,860	11,368	3,123
Southern Taoyuan	Turned on ventilation fans by zone (scheduled time)	128,909	250,083	68,708
Southern Taoyuan	Adopted energy-free drain equipment for air compressors	602,779	1,169,391	321,281
Houli	Replaced 66 high-pressure sodium street lights with LED street lights	37,580	72,905	20,030
Wurih	Replaced street lights	19,000	36,860	10,127
Wurih	Replaced cooling tower fan units	45,000	87,300	23,985
Tainan	Adjusted the angle of the ACC fan blades	85,680	166,219	45,667
Tainan	Replaced the submersible pumps of external pumping wells.	24,528	47,584	13,073
Tainan	Replaced T8 fluorescent tubes with T5	6,307	12,236	3,362
Tainan	Replaced obstruction lights (40W incandescent lights) with 10W LED lights	4,205	8,158	2,241

Note 1 : Benefit per year is calculated based on the average price of NT\$1.94/kWh.  
 Note 2 : CO2e reduction per year is calculated based on the 2018 emission coefficient of 0.533 kg/kWh of CO2e from the Bureau of Energy.



Cooling Tower Fan Units at Wurih Plant before Replacement



Cooling Tower Fan Units at Wurih Plant after Replacement

To optimize the entire transport process, ECOVE WMC achieves the performance of GHG reductions by planning the optimal routes. ECOVE WMC has 24 types of vehicles in total. ECOVE WMC has planned to purchase Emission Standard 5 eco-friendly vehicles since 2012. As of 2019, 13 eco-friendly vehicles were purchased. ECOVE WMC expects to purchase two more eco-friendly vehicles in 2020. According to the statistics in 2019, the fuel consumed by Emission Standard 5 vehicles accounted for 71% of the annual fuel consumption, reducing black smoke emissions by approximately 29%.

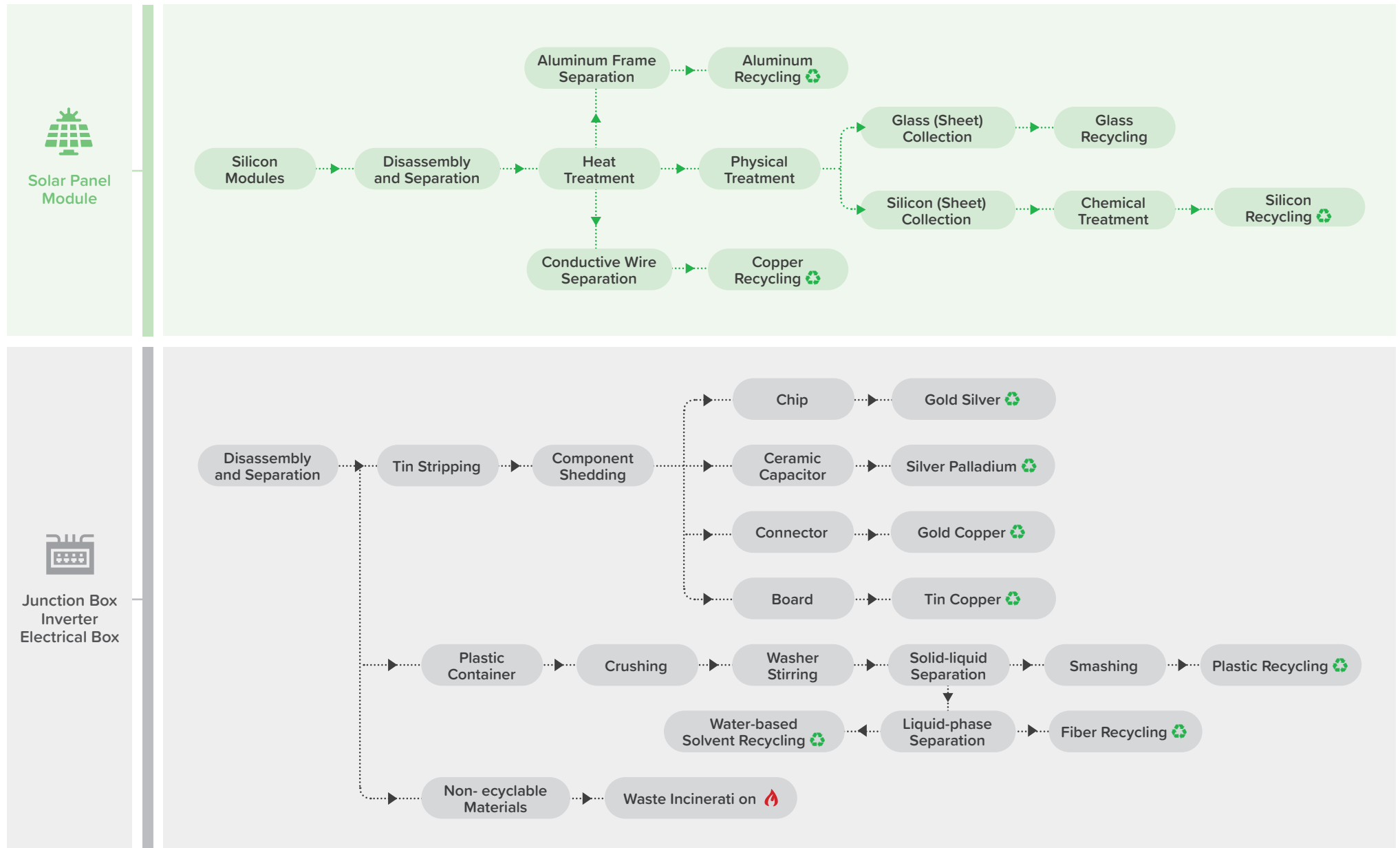
### Performance of ECOVE WMC's Eco-friendly Vehicles in Environmental Impact Reduction

Item	Unit	2015	2016	2017	2018	2019
Diesel consumption from operating vehicles	liter / year	398,902	357,634	277,371	194,181	199,692
Diesel consumption from Emission Standard 5 vehicles	liter / year	46,209	40,169	50,947	90,635	142,595
Ratio of diesel consumption from Emission Standard 5 vehicles to annual consumption	%	12	11	18	47	72
Ratio of reduction in black smoke emissions to annual emissions	%	5	4	7	19	29

Note 1 : Pursuant to the Vehicular Air Pollutant Emission Standards, the black smoke effluent standard for Emission Standard 5 vehicles is 15%, while the black smoke effluent standard for Standard 4 vehicles is 25%.  
 Note 2 : Ratio of diesel consumption from Emission Standard 5 vehicles to annual consumption (A) = Diesel consumption from Emission Standard 5 vehicles / Diesel consumption from operating vehicles x 100%.  
 Note 3 : Ratio of reduction in black smoke emissions to annual emissions = (Black smoke effluent standard for Emission Standard 4 vehicles - Black smoke effluent standard for Emission Standard 5 vehicles) / Black smoke effluent standard for Emission Standard 4 vehicles x A.

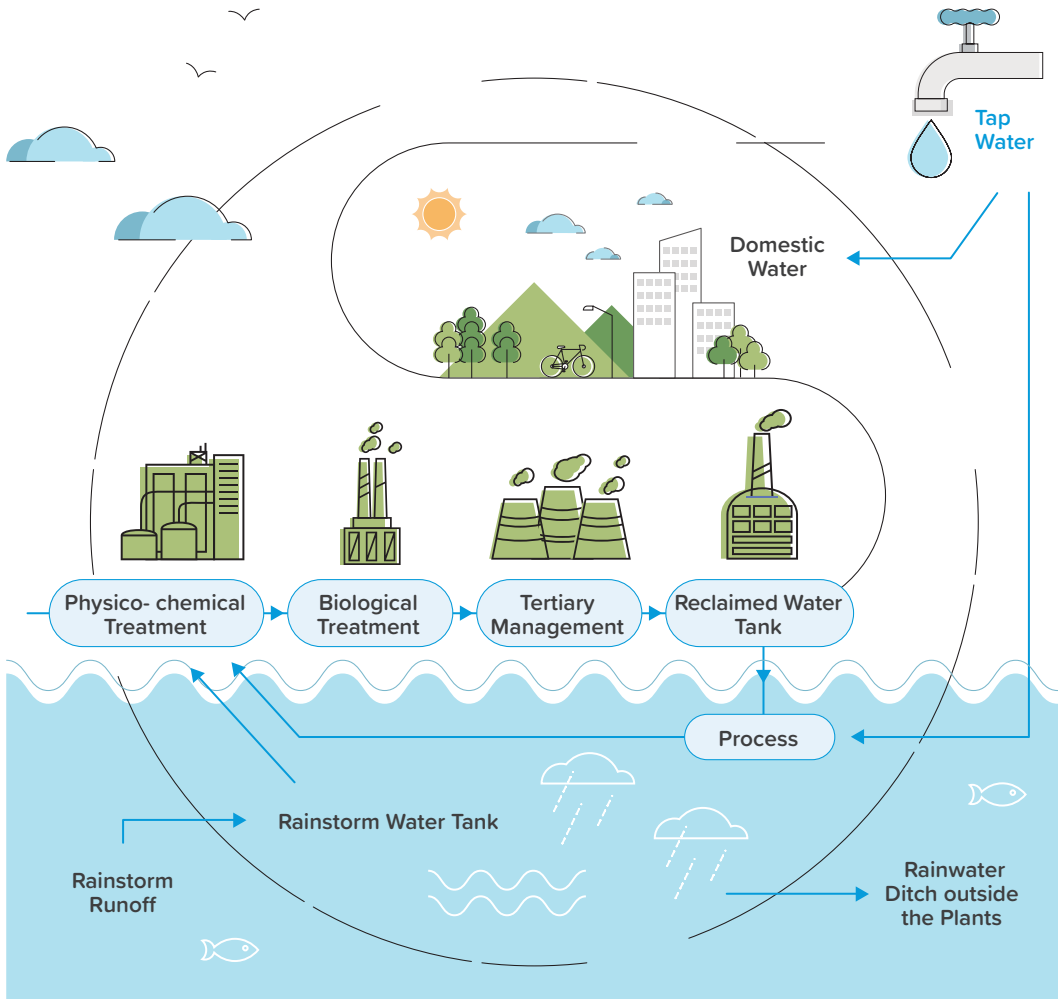


## Waste Disposal Process at Solar Photovoltaic Plant



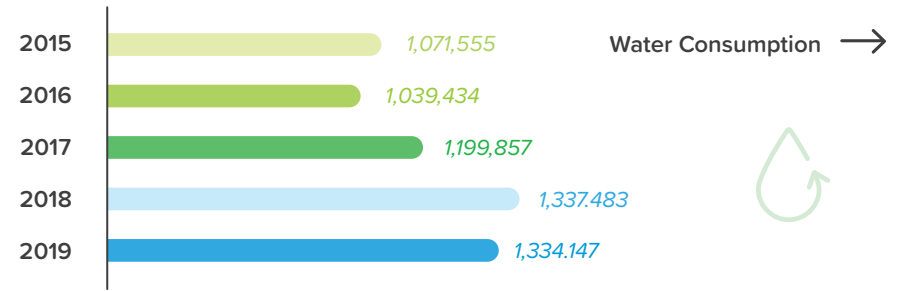
In the scope of ECOVE ESC Operations and Management, all sources of water consumption are tap water, and therefore no water source is significantly impacted. In terms of wastewater treatment, all water from boilers, processing, cleaning, general consumption, or car washing was reintroduced to the recycling system at the plant. All water was recycled and reused after physico-chemical, biological, and tier-3 treatment procedures, achieving "zero wastewater emissions."

### Circular Water Consumption



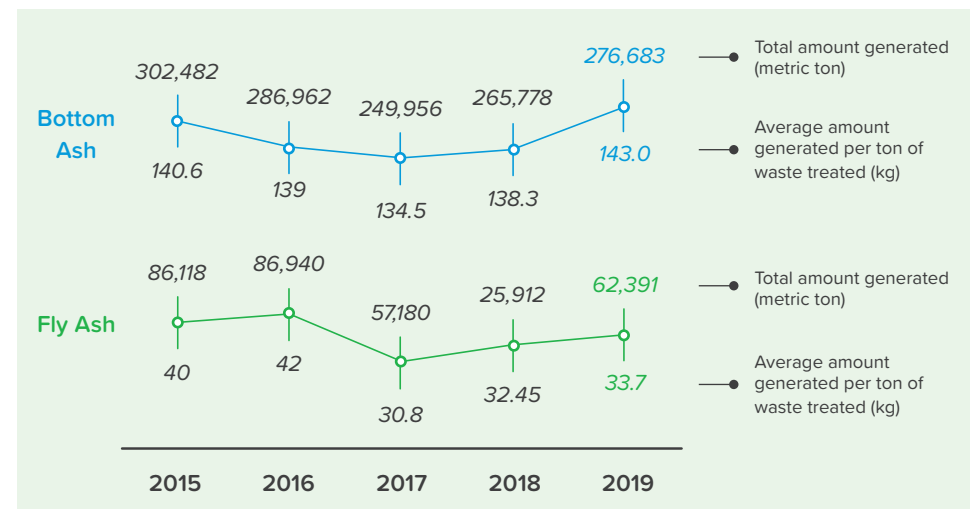
### Total Water Consumption within ECOVE ESC's Operations and Management

/ Metric Ton



The amount of bottom ash generated was 276,683 metric tons in 2019. An average 143 kg of bottom ash was generated per ton of waste treated. In terms of fly ash (including products after reaction), the amount of fly ash generated in 2019 was 62,391 metric tons. An average 33.7 kg of fly ash stabilized product was generated per ton of waste treated. All bottom ash was inspected in compliance with the laws, and after being confirmed as non-hazardous, the bottom ash would be transported to bottom ash treatment plant for reuse. Alternatively, after stabilized treatment, the fly ash was packaged and quality inspection would be conducted. Thereafter, it would be sent to landfill for sanitary burial.

### Amount of Bottom Ash and Fly Ash Generated from Incineration Plants



# Participation in Public Infrastructure

203-1

As the leader in waste treatment throughout Taiwan, ECOVE ESC continues to properly treat general waste and general industrial waste for the Taiwanese society. The waste incineration plants managed by ECOVE ESC perform well in waste treatment. Thermal energy produced from waste incineration can also be sold back to Taipower Company to contribute toward energy conservation and carbon reduction

for the planet. In addition to energy from waste (EfW), ECOVE ESC applies its core technologies to the following maintenance services for public facilities, including public transportation, air transport, and water resources and wastewater treatment.

## Public Service Projects in 2019

### Energy from Waste (EfW) and Waste Treatment



- Keelung City Incineration Plant
- Taoyuan County Southern District BOT Incineration Plant
- Taoyuan City Biomass Center construction, operation, and transfer (BOT) project
- Miaoli County BOT Incineration Plant
- Taichung City BOT Wurih Incineration Plant
- Taichung City Houli Incineration Plant
- Tainan City Chengxi Incineration Plant
- Kaohsiung City Gangshan Incineration Plant
- Southern Taiwan Science Park (Tainan Science Park)
- Resource Recycling Center
- Operations and Management and maintenance of incinerators at Taoyuan International Airport Waste Treatment Facility
- 2019 incineration plant equipment annual repair and technology and service improvement for Kaohsiung City Central District Resource Recycling Plant
- 2019 equipment maintenance and professional dumpster operation service for Kaohsiung City Southern District Resource Recycling Plant
- Pollution prevention equipment improvement engineering for Taoyuan International Airport Incineration Plant

### Public Transportation/Air Transport



- Air conditioning, fire prevention, and electrical equipment maintenance for Red and Orange Lines of Kaohsiung Rapid Transit
- T&C work for Circular Line of Taipei Rapid Transit (MRT)
- T&C work for Green Line of Taichung MRT
- Electrical equipment Operations and Management and maintenance for Taoyuan International Airport
- Air bridge replacement for Terminal 1 of Taoyuan International Airport
- Technical service for air bridge installation for Terminal 3 of Taoyuan International Airport

### Water Resources and Wastewater Treatment



- Operations and Management and maintenance of Xindian River Gravel Water Purification Treatment Facility
- Operations and Management and maintenance agreement for New Taipei City Linkou Water Resource Center

### Healthcare and Others



- 2019 joint channel management and maintenance of Minzu Road from the Public Works Bureau of Kaohsiung City Government
- Outsourced Operations and Management 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 and Management of Kaohsiung Port Health Inspection Center from Kaohsiung Branch of Bureau of Animal and Plant Health Inspection and Quarantine, Council of Agriculture, Executive Yuan
- Purchase and maintenance, management and Operations and Management of mobile environmentally-friendly ghost money burner in Tainan City
- Air conditioning system Operations and Management and maintenance for Kaohsiung Veterans General Hospital

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

## Most reliable

### ECOVE received the National Corporate Environment Protection Award, the highest level of environmental protection honor for enterprises

Derived from the ROC Enterprise Environmental Protection Award, the National Corporate Environment Protection Award is the highest honor for domestic companies that have fulfilled their corporate social responsibilities and have excellent environmental performance. In 2019, Tainan Science Park Plant, Keelung Plant, and Miaoli Plant stood out among the outstanding enterprises and received the Excellence Award and the Gold Award respectively for their innovative energy-saving technologies and comprehensive management systems.

Having won the Silver Award or above for three consecutive years, the Tainan Science Park Plant participated in the selection after winning the Environmental Protection Honor Award. Besides its outstanding performance in environmental protection, it is a self-sufficient waste treatment plant that provides one-stop service in the park. With intelligent systems in place, it was able to properly treat waste and reduce pollution while promoting energy conservation and carbon reduction initiatives that had delivered remarkably; what's more, its improved energy management through the adoption of environmental and energy management systems and its certification of environmental education facilities were recognized by the panel, making it the winner of the Excellence Award.

Keelung Plant independently developed bottom ash screening devices to improve the quality of bottom ash. It actively took measures for environmental protection, including promoting air pollutant emission reduction, implementing water conservation management, installing energy-saving lights, and setting air-conditioning temperatures, and recycled waste heat to replace 98.66% of electricity consumption; it was also a certified environmental education facility that promoted environmental education in the neighborhood through a strong lineup of volunteers. These environment practices were favored by the panel, making Keelung Plant the winner of the Gold Award.

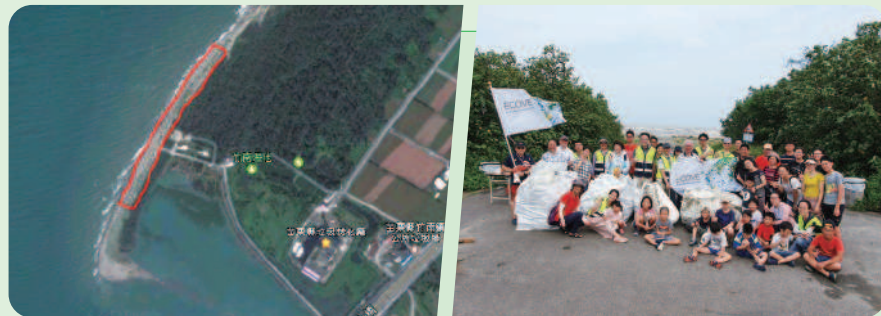
The Miaoli Plant introduced intelligent management systems to improve management efficiency with data analysis. It also implemented paperless operation. In addition to good results in pollution prevention and reduction, the environmental education facility had a well-designed flow and was impressive in terms of operation and management. The Miaoli Plant also used its environmental and geographical advantages to take part in the purple butterfly preservation project. Considering all of the above initiatives, the Miaoli Plant deserved the Gold Award.



— The Minister of EPA and ECOVE award-winning employees



The enterprises' approach to environmental protection has evolved from early pollution prevention into circular economy. Through the evaluation system of the National Corporate Environment Protection Award, ECOVE has incorporated environmental protection and corporate social responsibility into business



• ECOVE Adopt-a- Beach (red square), and beach cleanup event

decisions. In the future, ECOVE will consistently be adamant in providing quality, professional incineration plant Operations and Management and management services in line with national environmental policies, so as to become the most reliable leader in resource cycling.



• ECOVE' s time and workload saving mobile network, combining elements like intelligent management and paperless

• ECOVE carries out " Keep Trash Off the Ground" policy



• ECOVE, with its CSR, constructs public-friendly art space (floral clock as shown), establishing environmental protection mindset among people and following out the spirit of sustainable management.



• ECOVE staff carries out preventive and corrective maintenance for equipment (left : stoker interior maintenance ; right : fire protection system inspection)

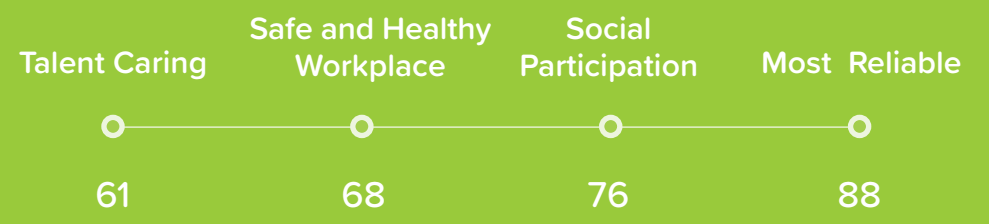




# Social Prosperity



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



## Performance Highlight

### 0 Incident

No major occupational disaster in 2019

### 5 Accredited Environmental Education Facilities

Keelung Plant, Miaoli Plant, Houli Plant, Tainan Plant, and Tainan Science Park Plant certified by the EPA as environmental education facilities

### Excellent Occupational Health and Safety

Tainan Science Park Plant awarded the Excellent Occupational Health and Safety Entity by the Ministry Science and Technology

### Occupational Safety & Health and Outstanding Environmental Protection Personnel

2018 Occupational Safety & Health and Outstanding Environmental Protection Personnel accreditation from the Ministry of Labor and Ministry of Science and Technology

### ISO 45001 Occupational Health and Safety Management System

ISO 45001 Occupational Health and Safety Management System certified by SGS Taiwan

### NO.1

1st place in the 2019 Excellence in Corporate Social Responsibility Award from CommonWealth Magazine for medium-scale enterprise

## Talent Caring

ECOVE continuously invests resources in building a happy, safe, and friendly workplace and providing a balanced work environment where employees can work at ease. On top of offering fair and competitive pay and benefits, ECOVE provides care and training for employees, allowing employees to grow with ECOVE toward sustainable development.

## Talent Composition and Compensations

102-8 102-36 201-3 202-2

401-1 404-3 405-1~2

## Employee Composition and Distribution

ECOVE focuses on circular economy, and the recruitment and development of professional talent are also aspects that ECOVE is highly committed to. The total number of employees in 2019 was 815 (excluding overseas personnel and directors). In September 2018, ECOVE acquired ECOVE Solar Energy Corporation (ECOVE SEC). ECOVE SEC was included in the data for this Report in 2019. Due to the field and nature of our business, the employees were predominantly male at 82% of the total. In terms of the types of employment, most of our employees were full-time, accounting for 88% of the total. ECOVE did not recruit foreign nationals in Taiwan, and the ratio of local employment of the management was 100%.

## Employee Numbers and Genders

2017		Total	759		Male		Female	
Full-time Employees	Number of Employees	530	111					
	Percentage (%)	70%	15%					
Part-time Employees*	Number of Employees	102	16					
	Percentage (%)	13%	2%					

2018		Total	817		Male		Female	
Full-time Employees	Number of Employees	547	111					
	Percentage (%)	67%	13%					
Part-time Employees*	Number of Employees	137	22					
	Percentage (%)	17%	3%					

2019		Total	815		Male		Female	
Full-time Employees	Number of Employees	588	129					
	Percentage (%)	72%	16%					
Part-time Employees*	Number of Employees	78	20					
	Percentage (%)	10%	2%					

\* Contract or outsourced employees.

## Number of Employees and Age Distribution

2017		Male		Female	
Below 30	Number of Employees	74	17		
	Percentage (%)	10%	2%		
31-50	Number of Employees	430	99		
	Percentage (%)	57%	13%		
Over 51	Number of Employees	128	11		
	Percentage (%)	11%	1%		

2018		Male		Female	
Below 30	Number of Employees	99	20		
	Percentage (%)	12%	2%		
31-50	Number of Employees	457	103		
	Percentage (%)	56%	13%		
Over 51	Number of Employees	128	10		
	Percentage (%)	16%	1%		

2019		Male		Female	
Below 30	Number of Employees	79	21		
	Percentage (%)	10%	3%		
31-50	Number of Employees	443	116		
	Percentage (%)	54%	14%		
Over 51	Number of Employees	144	12		
	Percentage (%)	18%	1%		

## Gender Distribution for Managerial and Non-managerial Roles in 2019

Job Category		Female	Male
Managerial		19	163
Non-managerial	Engineering	16	107
	Technology	27	383
	Others	87	13

Managerial roles refer to supervisors with ranks of head of team and above. Non-managerial roles refer to professional engineers (engineering), onsite technical operators (technology), and personnel from finance, accounting, legal affairs, HR, administration or general affairs departments (others).

## New Employees and Turnover

The Company had 94 new employees in 2019, accounting for 11.5% of all employees, and 73% of the new employees were male. Most of the new employees were recruited as manpower needed for new projects in 2019. In terms of age distribution of the new employees, most of them were aged between 31 and 50. In terms of employee turnover, 72 left the Company, accounting for 9% of all employees; in addition, two employees met the criteria for retirement and filed for voluntary retirement.

### Age and Gender Distribution of New Employees in the Past Three Years

Year	Total	Total Percentage	Male	Female
2017	Below 30	Number of Employees	37	12
		Percentage (%)	5%	1%
	31-50	Number of Employees	86	22
		Percentage (%)	11%	3%
	Over 51	Number of Employees	19	0
		Percentage (%)	3%	0%
2018	Below 30	Number of Employees	40	7
		Percentage (%)	5%	1%
	31-50	Number of Employees	81	10
		Percentage (%)	10%	1%
	Over 51	Number of Employees	19	0
		Percentage (%)	2%	0%
2019	Below 30	Number of Employees	26	8
		Percentage (%)	3%	1%
	31-50	Number of Employees	38	17
		Percentage (%)	5%	2%
	Over 51	Number of Employees	5	0
		Percentage (%)	1%	0%

### Age and Gender Distribution of Employee Turnover in the Past Three Years

Year	Total	Total Percentage	Male	Female
2017	Below 30	Number of Employees	27	5
		Percentage (%)	4%	1%
	31-50	Number of Employees	85	11
		Percentage (%)	11%	1%
	Over 51	Number of Employees	21	1
		Percentage (%)	3%	0%
2018	Below 30	Number of Employees	11	4
		Percentage (%)	1%	1%
	31-50	Number of Employees	33	2
		Percentage (%)	4%	0%
	Over 51	Number of Employees	10	0
		Percentage (%)	1%	0%
2019	Below 30	Number of Employees	18	5
		Percentage (%)	2%	1%
	31-50	Number of Employees	32	7
		Percentage (%)	4%	1%
	Over 51	Number of Employees	9	1
		Percentage (%)	1%	0%

## Promotion and Compensation

Tying compensation with performance, ECOVE conducts both internal and external reviews in setting compensation. Besides providing higher salaries than the local minimum wages, we also strive for internal, external, and individual fairness. The Company conducts an annual performance evaluation for all employees on a regular basis. Standards for salary adjustments and bonus payment do not differ based on the type of employment, gender, or age. In terms of career development, the Company provides employees access to learning opportunities for cross-departmental functions and development and always inquires employees on their willingness before internal rotation is conducted. In case that employees transfer due to business needs or are willing to be transferred, we and employees will spend time together to negotiate and discuss so that sufficient preparations and adjustments for business arrangements and employee preparations can both be achieved. In case of significant operational changes, we will notify the employees in advance within the time limit prescribed by law. All of the above efforts are made in pursuit of putting the right persons in the right places.

Rank / Year	2019 (Base Salary Ratio)	2019 (Compensation Ratio)	
	Male/Female	Male/Female	
Managerial	1.040	1.142	
Non-managerial	Engineering	1.244	1.277
	Technology	1.147	1.256
	Others	1.034	1.039

- Note:
1. Base salaries were the same for both females and males at all positions. The difference in compensation between each rank was related to individual seniority. No difference was found in the standards for base salaries and compensation for the same ranks and seniority.
  2. Compensation included base salaries, allowances, bonuses, benefits, overtime payment, compensatory leaves and any other forms of incentives. The data did not include compensation for temp workers. (Base salaries should be included; that is, compensation included base salaries, allowances, bonuses, benefits, overtime payment, compensatory leaves and any other forms of incentives.)
  3. Managerial roles refer to supervisors with ranks of head of team and above.
  4. Non-managerial roles refer to professional engineers (engineering), onsite technical operators (technology), and personnel from finance, accounting, legal affairs, HR, administration or general affairs departments (others).
  5. Due to safety consideration, female workers do not participate in shifts; therefore, no nighttime duty-related incentives were distributed as a part of their compensations.

Item	2018	2019	Difference
Number of full-time employees who assume non-managerial roles	724	770	↑6.3%
Average salary of full-time employees who assume non-managerial roles (NT\$ thousand)	928	937	↑0.9%
Salary of full-time employees who assume non-managerial roles (NT\$ thousand)	844	846	↑0.2%

## Human Rights Protection and Benefits

401-2~3   402-1   406-1   408-1

ECOVE has clearly established in the Employee Code of Conduct that no form of discrimination shall be made based on factors, including gender, race, religions, political inclinations, sexual preferences, occupational ranks, nationalities, and age. In addition, all employees shall collectively maintain a healthy and safe work environment, and no form of sexual harassment or acts of violence or threat will be tolerated. In 2019, we recruited 10 physically or mentally disabled employees more than the statutory requirements.

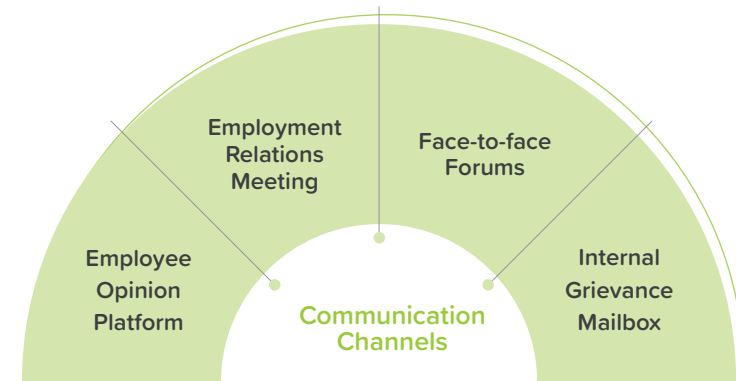
A "Sexual Harassment Grievance Handling Committee" has been set up at ECOVE to be in charge of handling related incidents. The aforesaid committee comprises of three members, and the head of the Group Shared Services (GSS) serves as its convener. Other members are selected from among employees by the head of each department in consultation with the Executive Vice President of the GSS. The ratio of female committee members shall not be less than one-half. The committee strictly adheres to confidentiality and non-disclosure policy. In addition, results of investigation must be submitted three months after a complaint is filed. Designated channels for handling relevant complaints include a complaint hotline (02)2162-1688 #56112 and a mailbox: HR@ecove.com.

ECOVE is dedicated to protecting the employees' freedom of association, and in addition, no child labor is used. We provide a fair work environment and unimpeded channels of communication through the missions of taking care of employees and sharing our profits. No sexual harassment complaints or illegal discriminatory incidents occurred in 2019.

## Communication Channels

To fully communicate with employees, an "Employee Opinion Platform," which contains channels for employees to speak their minds, has been established at ECOVE. Five types of channels exist on the platform: 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 interest of the whistleblowers. Furthermore, ECOVE has also nominated employer and employee representatives

according to regulations. Representatives for each side account for 50% of the committee, and in order to promote communications and harmony between the Company and the employees, labor relations meetings are organized in each quarter to discuss matters on labor conditions, benefits, and productivity. To solve problems on a timely and practical manner, senior managers of the Company also directly meet with employees from each department face-to-face on a regular basis each year. In addition, employees can also express their opinions through the internal complaint mailbox (HR@ecove.com) on a day-to-day basis. With unimpeded communications between both sides of the labor-management relations, no violation of the Labor Standards Act due to labor disputes and resulting in penalties occurred in 2019.



ECOVE makes good use of intelligence in management by launching a mobile phone application (myCTCI) group-wide to facilitate instant communication without time and distance limitation. myCTCI is a combination of personnel, training, and instant announcement systems. With myCTCI, employees at home and abroad can receive the latest information online to enjoy real-time communication. Amid the COVID-19 pandemic, ECOVE pays more attention to the health of employees and their families. With myCTCI, employees can receive the latest epidemic information or e-mails online and take leave or attend training courses without clocking in personally, greatly reducing the risk of mutual infection.



Instant announcements to update employees on the latest information on epidemic prevention

Online feedback system for unimpeded communication

Online learning and training for employees



## Employee Caring

Caring for employees and providing a workplace with balanced life and work are important parts of a business's robust growth. ECOVE continues to invest resources and never lags behind in terms of employee caring. In turn, our employees are passionate and committed to their work, thereby motivating the entire business toward continuous growth. ECOVE gives out bonuses for holidays, birthday bonus, childbirth funds, and also consolation funds for hospitalization, critical illnesses, and deaths. For employees on overseas assignments, besides providing information on local living environments, the Company also provides four round-trip tickets and holidays for them to visit their families in Taiwan. Employees on overseas assignments can also receive expat bonuses in acknowledgement of their hard work. Pursuant to relevant laws including the Act of Gender Equality in Employment, ECOVE has stipulated the regulations governing "unpaid parental leave." Two employees applied for unpaid parental leave in 2019, indicating that ECOVE has provided a workplace with balanced work and life and properly cared for employees.

## Employee Satisfaction Survey

Response Rate

93%

Satisfaction Rate

81%

In 2019, the employee engagement survey was conducted using an anonymous approach, allowing employees to give their answers at ease. Among 793 employees, 738 valid questionnaires were retrieved, with a response rate of 93% and a satisfaction rate of 81%, a 4% increase from 2016. This demonstrates that ECOVE's efforts have won positive recognition from most of the employees. For aspects and items with low scores, we managed to find out the underlying reasons and worked out the action plans to enhance employees' engagement. Each plan was implemented as scheduled under the PDCA model to improve employee satisfaction.

## Data on Unpaid Childcare Leave

Year	2017			2018			2019		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Number of Applicants	2	0	2	3	1	4	2	0	2
Number of Employees Qualified for Unpaid Childcare Leave	14	2	16	13	2	15	8	1	9
Number of Employees Applying for Reinstatement	1	2	3	1	1	2	0	0	0
Number of Employees who Are Supposed to Be Reinstated	2	2	4	2	1	3	0	0	0
Number of Reinstated Employees who Have Worked at ECOVE for One Year	0	2	2	1	0	1	0	1	1
Number of Employees Reinstated in the Previous Year	0	3	3	1	2	3	1	1	2
Application Rate (%)	14	-	123	23	50	27	25	0	0
Reinstatement Rate (%)	50	100	75	50	100	67	-	-	22
Retention Rate (%)	-	67	67	100	-	33	0	100	50



## Retirement and Benefits

ECOVE has established the "Labor Pension Reserve Supervisory Committee" according to laws and regulations, and 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 for all employees who meet the criteria for the new scheme.

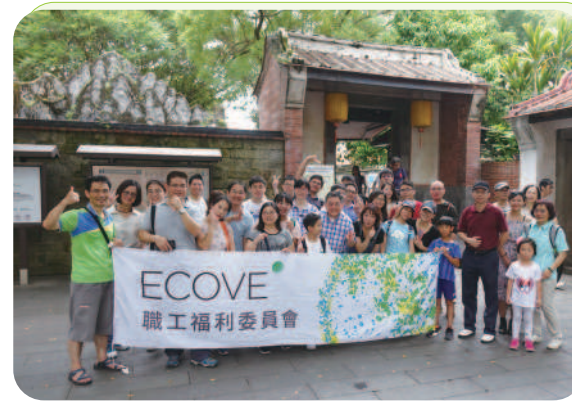
To attract and retain talent, as well as to inspire employees and to enhance cohesion, the Company has established the Employee Stock Ownership Trust Charter, stipulating that employees can voluntarily appropriate 5%~15% from their monthly salaries to subscribe to stock options, and the Company will give back 50% of the voluntary appropriations as reward for subscription. Employees are encouraged to hold the parent company's stock for a long time, so as to share the business results with the Company.

ECOVE reviews the health checkup items offered by contractual hospitals every other year and provides free health checkup for employees. We continue to care for employees and promote health management. In addition to the fundamental labor insurance and National Health Insurance, group insurance, health checkup and employee stock ownership trust, the Company will file for insurance and the full amount of life and accidental insurance on the first day of job for all employees. Employees and their families are also offered the alternative and allowances for other insurance items. This helps employees to perceive the additional protection that the Company offers to their family income.

Moreover, ECOVE has also set up an Employee Welfare Committee (EWC). In addition to the President being a member de facto, the other 13 committee members are elected by the employees. The committee organizes employee travel within Taiwan, on top of birthday gifts, holiday gifts, and various incentives and allowances so that employees can rest assured and be more committed to their work. Following ECOVE's employee-centric spirit, the EWC puts the employees' health first and also takes care of employees' family members. By organizing the Family Day featuring environmental, knowledgeable, and cultural activities, we invite employees and their family members to travel to escape from work temporarily and have a great time together.



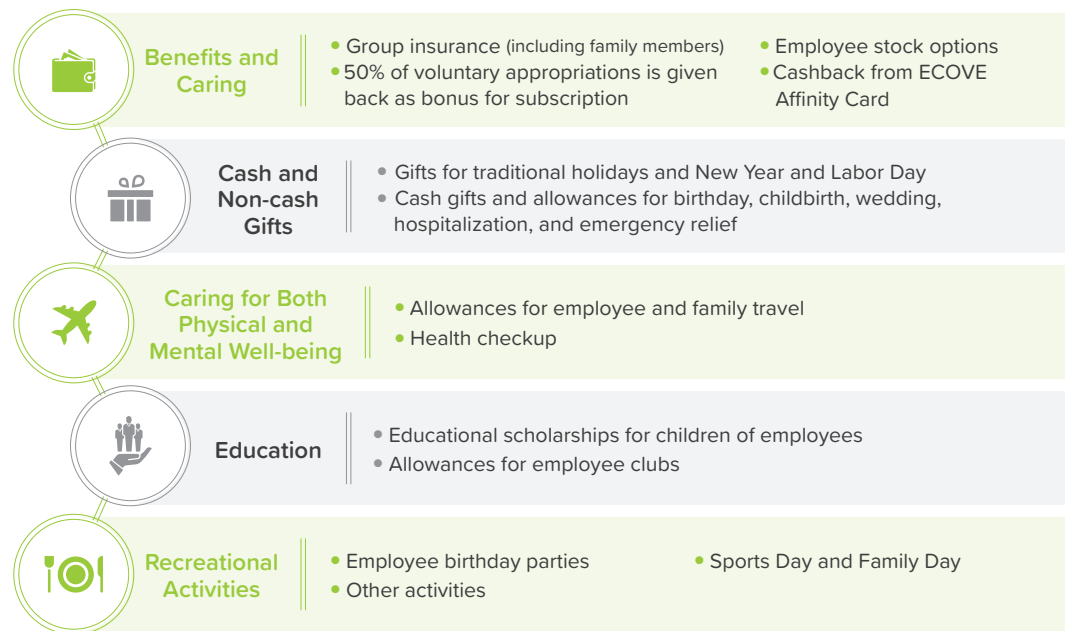
ECOVE combines employee travel with beach cleanup to call on employees to protect the environment together.



EWC holds the Car Free Day to promote environmental protection.



Employees and family members have a good time in the ECOVE Family Day.



## Talent Development

404-1

In response to the unique nature and professionalism required of our business, ECOVE has established the "Employee Continuing Studies Management Procedures" to train and foster professional competencies in employees. These procedures are used for planning and executing annual employee training programs and subsequent performance review. In addition, to enhance competitiveness and global perspective, the Company provides online English channel for all employees to strengthen their language competencies.



As Taiwan is relatively in lack of academic programs and resources for the field of circular economy, ECOVE has set up a series of training courses. In addition, the Company has also signed a memorandum of cooperation for bilateral technical consultancy and information exchange respectively with Tamkang University, Chia Nan University of Pharmacy & 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 2019, ECOVE had two new partners, namely, Ming Chi University of Technology and National Chin-Yi University of Technology, and received three interns. To effectively utilize resources from both parties, the students could learn at ECOVE while receiving school credits, building a successful partnership between the industry and the academia.

Global Training System (GTS), an online training platform developed by the Group, provides knowledge of engineering in various professional fields like EfW, recycling, and renewable energy for employees, allowing employees to learn and to grow their professional know-how from anyone, anywhere, and anytime.

Total employee training hours amounted to 17,667 hours in 2019 and included professional skills training such as incinerator Operations and Management and maintenance, safety and health training, self-guided health courses, and general and management training. Total annual training expense was approximately NT\$2.74 million.

Year		2017			2018			2019			
Ranks	Gender	Number of Persons	Total Training Hours	Total Training Hours	Number of Persons	Total Training Hours	Total Training Hours	Number of Persons	Total Training Hours	Total Training Hours	
Managerial	Female	15	696	46	19	584	31	19	558	29	
	Male	151	8,275	55	156	6,323	41	163	4,547	28	
Non-manual	Engineering	Female	12	225	19	12	245	20	16	451	28
		Male	93	2,406	26	101	1,940	19	107	1,982	19
	Technology	Female	18	331	18	20	323	16	27	357	13
		Male	378	13,195	35	417	10,892	26	383	8,550	22
	Others	Female	82	1,478	18	82	1,520	19	87	1,150	13
		Male	10	400	10	10	293	29	13	74	6
Total	Female	127	2,730	21	132	2,672	20	149	2,515	17	
	Male	632	24,276	38	684	19,449	28	666	15,152	23	

## Talent Cultivation

ECOVE actively invests resources in talent cultivation, hoping to attract like-minded professionals. We make overall planning on comprehensive education and training, train new talents, and provide professional training for different categories. In addition to tailoring every employee's individual development plan (IDP), we continue to invest resources in the management ability development, the mentor system, and online learning course so that our employees continue to learn and grow and agree with ECOVE's corporate culture and heritage even more.

Through establishing individual development plans for those primed to assume key positions, employees can establish ways for development through training, experience, honing in on their strengths, and singling out needed skills by communicating with workplace mentors and based on their own advantages and disadvantages. This will enhance our overall employee competitiveness and a win-win result for the development of our employees and the Company. The Company's key

positions, high-potential talent, and young potential talent are all identified according to future development needs. We list employees' capabilities first, and then consider their past performance in the stage of screening.

The first stage is to conduct 360-degree and leadership potential evaluation to understand the candidate's strengths and weaknesses in order to train and provide the mentoring and coaching program. With the help of external consultants, the tailor-made development projects include elite career planning and development by his/her highest supervisor.

In 2019, to improve the relatively weak items of the 360-degree evaluation report - strategy and innovation ability, we held intensive courses with the goal of internalizing management tools with Harvard case study and situational training, and supplemented by reading clubs to strengthen management knowledge and learning.



ECOVE Director Shu-Wei Yu lectures on risk management guidelines.

Vice President and an outstanding engineer from Chinese Institute of Engineers



NTU Professor Kuo-Lun Tung introduces ISO31000 Risk Management.



Team Leader Chen from Tainan City Government Fire Bureau lectures on Taiwan's disasters and disaster management.



# Safe and Healthy Workplace

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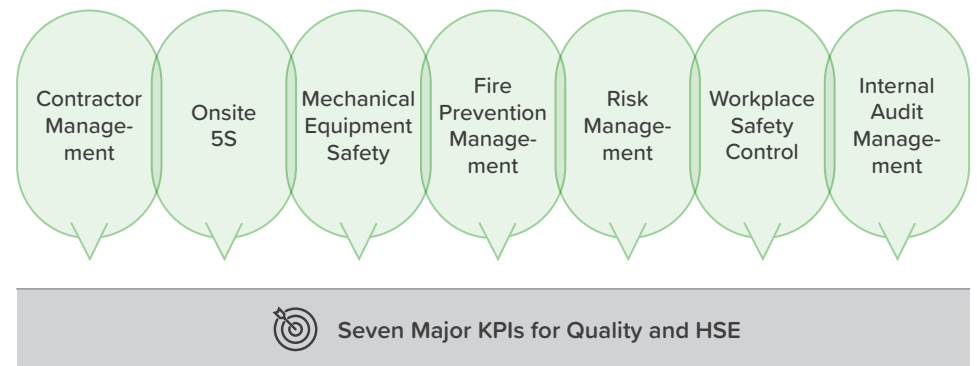
## Policies and Committees

ECOVE has established the Health Safety and Environment (HSE) policy and sees execution of environmental protection and building a safe and healthy work environment as the principle. Moreover, we are dedicated to maintaining the physical and mental health and well-being of employees and all contractors and partners and to ensuring a safe work environment.

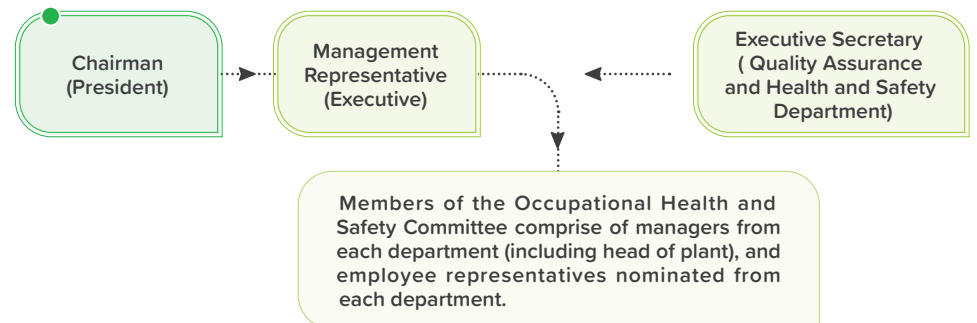
	<b>Safety First</b>	Ensuring safety of the workplace; striving to achieve zero occupational casualty in Company Operations and Management and project execution.
	<b>Promotion of Employee Health and Welfare</b>	Actively promoting self-management of occupational health, strengthening protection and care for physical and mental health, creating a healthy work environment, and enhancing overall well-being.
	<b>Environmental Protection and Sustainable Development</b>	Providing professional services that meet environmental regulations, promoting energy conservation and carbon reduction, pollution prevention, and resource cycling, and enhancing overall well-being with stakeholders.
	<b>Implementing Risk Management Systems</b>	Identifying, assessing, and handling risks in safety, health, and environmental aspects, preventing occupational hazards and pollution, continuing to improve overall performance in safety, health, and environmental aspects.
	<b>Meeting Regulatory and Contractual Requirements</b>	Identifying applicable laws, regulations, and contractual terms, supervising and implementing safety, health, and environmental plans, ensuring the Company and its project processes meet safety, health, and environmental requirements and fulfill contracts.
	<b>Promoting Employee Participation in Training</b>	Encouraging participation in safety, health, and environmental training, enhancing awareness and abilities in safety, health, and environmental matters; providing effective channels for safety, health, and environmental consultation, communication, and feedback for partner contractors and employees.
	<b>Continuing to Improve Safety, Health, and Environmental Systems</b>	Continuing to review and optimize safety, health, and environmental processes, ensuring the completeness and viability of safety, health, and environmental management systems, improving the applicability, relevance, and effectiveness of safety, health, and environmental management systems.

ECOVE, ECOVE WEC, ECOVE Miaoli Energy Corp., and ECOVE SEC has not established an occupational health and safety committee as they do not meet the requirements; however, ECOVE and all subsidiaries are committed to implementing safety and health management. In the case of ECOVE ESC, the Occupational Safety and Health Committee convenes one meeting each quarter. The committee has 36 members, and 13 of whom are employee representatives, accounting for 36% of the total. The President chairs the committee, and all meeting results are announced on the internal website to achieve the effects of information sharing and dissemination, as well as for following up on improvements.

Quality and HSE goals are set up based on the HSE policy each year, and key performance indicators (KPI) are established based on the needs of onsite safety and health management. KPIs include the following seven major categories: contractor management, workplace safety control, mechanical equipment safety, fire prevention management, risk management, onsite 5S, and internal audit management. The Quality Assurance and Health and Safety Department will inspect each operation with no prior warning or scheduling each quarter, and the review results will be compiled and submitted to management meetings and the Occupational Safety and Health Committee.



### Organization of the Occupational Health and Safety Committee



## Risk Evaluation and Workplace Safety Control

In terms of risk control on occupational safety and health, the Company 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, the Company also reviews the reasonableness of processing standards through onsite inspection to meet the appropriateness of processing standards.



The management system evaluates the safety control regulations for more dangerous and hazardous work processes such as open-flame procedures or working from heights, rotating equipment, hanging Operations and Management, electrical equipment inspection, and fixing abnormal equipment. Work assignment is conducted through the Maintenance Management Information System (MMIS) developed by ECOVE ESC on a daily basis. The Job Safety Analysis (JSA) promotions are carried out during morning meetings. To achieve the zero-disaster target, Operations and Management can only begin after employees have filed for application based on the risk of the jobs and work safety control regulations, and one-by-one confirmation for power outage, isolation, locking, and labeling on site with the operators, maintenance, and safety and health personnel.



Isolation Label

Confirmation by operators, maintenance, and safety and health personnel

## Mechanical Equipment Management, Key Inspection, and Job Checks

As for machinery and equipment management, the MMIS system includes each machine or equipment at each EfW plant that the Company manages into schedules, and maintenance planning and repair follow-up will be conducted on an Internet-based system to avoid any negligence. Moreover, automated inspection plan is established on equipment before processing, and pre-work inspection, onsite observation and inspection during processing, and after-work onsite confirmation and review are conducted in practice. To control processing safety, various safety control processes are adopted, and Internet-based permit and license query is also used to effectively confirm the validity of permits and the qualification of operators.

Before outsourcing engineering work, ECOVE clearly states the safety and health regulations and hazardous factors related to said engineering work on the Outsourced Engineering Prospectus after evaluation so that we could search for suitable contractors. To enhance contractors' awareness for safety and health, the Company also conducts contractor safety and health work education training at northern and southern Taiwan respectively each year. The HSE policy and the contracts both include occupational safety laws that shall be complied with (e.g., the right to refuse imminent work pursuant to Article 18 of the Occupational Safety and Health Act). The educational training also teaches workers to protect themselves under unsafe and unhealthy conditions.

Before work is carried out, ECOVE will announce hazardous factors and convene a mediation organization to strengthen the acknowledgement and awareness for safety and health during plant processing. Moreover, the machinery and equipment to be used will be inspected one-by-one to ensure safety of use. During the engineering period, toolbox meetings will be conducted every day and audit will be conducted from time to time. Immediate rectification will be required whenever deficiencies is found, and review meeting will be required based on actual needs. After the implementation, performance evaluation for the seven occupational safety and health KPIs during the engineering period will be conducted. In case evaluation results fall short of Company requirements, the contractor will be blacklisted as an unqualified supplier.

As for access control, facial and fingerprint recognition system will be used at each plant. In addition, qualification review is conducted for the engineering personnel. After permission has been granted, personal traits will be scanned into the identification system to strengthen access control over the onsite personnel as well as contractors. During the engineering period, besides the aforementioned review and announcement training, the Company will also conduct blood pressure or sobriety test on the workers from time to time. In case of abnormality, the worker in question will be suspended for the day to prevent any personnel physical hazards from conducting constraining, elevated or high temperature work. Personnel are also reminded to autonomously monitor their own physical health and discipline at all times.



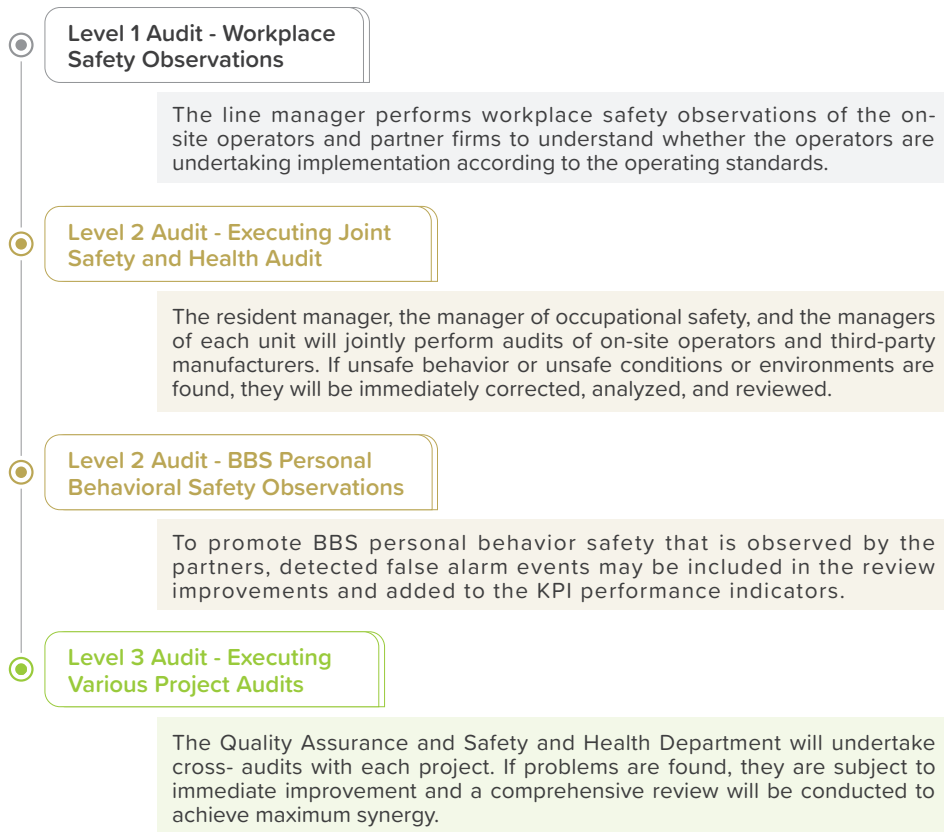
The facial and fingerprint recognition system was installed to control the entering contractors



## 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 reference for amendments to the work standards. ECOVE ESC actively conducts a three-tiered audit management system, in which onsite engineers will carry out the onsite safety and health level 1 management, the safety and health personnel and onsite managers will carry out level 2 safety and health audit (including self-evaluation from each plant), and the Company will subsequently conduct a level 3 safety and health supervision audit. By integrating the auditing system with evaluation, we can implement the safety management and audit system in practice.

### Three-level Management and Audit



To verify whether Operations and Management are in compliance with various legal regulations and to evaluate the effectiveness of existing management standards over systems, meticulous and frequent auditing activities and auditing inspection from various auditing departments and professionals are conducted to early detect problems and to adopt appropriate rectification measures. Moreover, root causes of the problems found during audits are reviewed to ensure the effectiveness and appropriateness of the quality, environment and the safety and health system, thereby optimizing quality and enhancing reliability and trust. Auditing deficiencies are analyzed for reasons by units under the Quality Assurance and Safety and Health Department and relevant improvement measures are sought for. After confirmation, improvement measures will be undertaken and, and relevant Company departments (Factory Affairs or Project Department I or II) and the Quality Assurance and Safety and Health Department will be notified. Improvement results will be explained in a senior management meeting and the case will be closed.

## Occupational Disaster Prevention

ECOVE has always been very focused on occupational safety and health, and we actively invest related resources in providing a safer work environment for employees. All employees are deeply aware that safety is related to their personal well-being, and are dedicated to carrying out and seeing zero-disaster as the priority in our processes. By promoting various plans and systems and upholding the core value of being "people-oriented," we invest manpower and resources toward maintaining the safety and health of employees at work. We build a safe and healthy work environment and have set sustainable management as a vision in building an environment with zero-disaster.

Definition	Classification	Year	Actual Value	Target
Based on Occupational Health and Safety Administration, USA	Total recordable case rate (TRCR)	2019 Year	0	≤0.3
	Days away, restricted, or transferred incidence rate (DARTR)		0	≤0.2

**Description :**

1. No major occupational disaster occurred in 2019. A total of 14 inspections were received by inspection units within jurisdictions of our Operations and Management, and two penalty cases were received.
2. DARTR: Number of days away, restricted, or transferred incidents x 200,000 / Total accumulated work hours in a year; TRCR: Number of total recordable cases of OSHA (Note 1) x 200,000 / Total accumulated work hours in a year; the number of total recordable cases of OSHA refers to the total number of incidents that can be recorded as deaths, disabilities, restrictions, or exchange of work and medical care.
3. Data on the table includes Taiwan and all subsidiaries and investment companies in Macau and Zhejiang.

Latest Record of Zero-disaster Working Hours ( part of examples )



2019 Educational and Training Courses	Round	Number of People (individual)	Coverage Ratio (%)
General employee safety and health education training	8	150	100%
Special processing and hazardous education training (open flame, controls over restricted space, heights, rotating equipment separation, etc.)	29	688	100%
Contractor safety and health training	4	121	100%
Earthquake, fire fighting and emergency response training (fire extinguisher, CO2, hose, fire fighting sprays, etc.)	10	193	100%
Other education training (road safety, equipment processing safety training, legal compliance, gesture training, etc.)	67	1066	100%



Emergency response drill for chemical (ammonia) spills



Staff fully equipped for chemical spills

\* Coverage ratio = (Number of actual trainees / Number of assigned trainees) x 100%.



CO2 fire suppression system training



Storage pit fire drill



Storage pit fire drill at Chinese New Year



Fire drill for diesel tanks

Types of Injury (Number of Persons)	2016	2017	2018	2019
Falling	1	1	0	0
Caught in Machine or Crushed	1	0	1	0
Falling Objects	0	0	0	0
Burns	3	0	0	0
Being Hit	0	0	0	0
Electrocution	1	0	0	0
Tumbles	1	1	0	0
Muscle or Skeletal Injuries	0	0	2	0
Traffic Accidents	5	5	0	3
<b>Total</b>	<b>12</b>	<b>7</b>	<b>3</b>	<b>3</b>

\* The three injuries sustained in 2019 were all male.  
 \* Types of injuries sustained by contractors or outsourced vendors in 2019 were 0.

### Work-related Injuries

Item	2016	2017	2018	2019	Calculations
Disabling Frequency Rate	0.41	0.00	0.10	0	Number of disabling Injuries x 200,000 / Total number of working hours
Occupational Disease Rate	0	0	0	0	Number of occupational diseases x 200,000 / Total number of working hours
Severity of Disabling Injuries	4	1	0.79	0	Total number of working days lost x 200,000 / Total number of working hours
Deaths	0	0	0	0	-
Number of False Alarms	0	0	0	0	-
Disabling Frequency Rate	0	0	0	0	Number of disabling Injuries x 200,000 / Total number of working hours
Occupational Disease Rate	0	0	0	0	Number of occupational diseases x 200,000 / Total number of working hours
Severity of Disabling Injuries	0	0	0	0	Total number of working days lost x 200,000 / Total number of working hours
Deaths	0	0	0	0	-
Number of False Alarms	0	0	0	0	-

- In 2019, the disabling frequency rate, severity of disabling injuries, and number of deaths for contractors and outsourced vendors were all 0.
- No occupational disasters occurred in ECOVE SEC and ECOVE Solvent Recycling Corp. in 2019.
- In 2019, the disabling frequency rate, severity of disabling injuries, and number of deaths for contractors

### Obtaining ISO9001 Certification

In keeping true with the safety and health first mission, ECOVE has established risk management, legal compliance, communications training, and continuous improvement policies. ECOVE ESC and all of the eight energy-from-waste plants have received OHSAS 18001 and TOSHMS certificates in as early as 2009, and in response to policy from the Ministry of Labor in 2011, we have transitioned TOSHMS certification to CNS 15506; moreover, our eight operational sites also obtained the ISO 45001 certificates in 2018. All operational sites are 100% included in the verification process for the certification, along with all employees, contractors, outsourced vendors, and in essence, all workers throughout the workplace. In 2019, all of our operational sites, including the head office, obtained ISO 45001 certificates.



## Occupational Health Management

In consideration of employees' work environment and conditions, ECOVE has planned comprehensive health management system and provides health checkup and specialized health checkup for every new employee. This is better than the minimum legal requirements and our gesture to care for employees. Currently, a general health checkup is conducted every 2 years, and specialized health checkup once every year. In addition, work environment detection is carried out regularly based on employees' work conditions and possible hazard exposures. To carry out environmental and employee health management, employees with possible hazard exposures, such as airborne dust, will undergo specialized health checkup. Currently, health checkups are carried out with positive effects, and no related occupational diseases have been found during specialized health checkups.

### Health Management and Seminars

In terms of services for occupational health, we organize related education training courses and provide consultation for hazardous factors that employees are more likely to be exposed to at work. This helps employees to gain full awareness for their work environment and to further understand ways to protect their own health and to mitigate health impacts.

In terms of health promotions, we also organize smoking cessation clinics, alcohol cessation and healthy dietary courses from time to time to enhance employees' awareness for maintaining their well-being. We highly encourage employees to actively participate and to put healthy living in practice.

In addition to providing necessary basic health examinations for new and current employees and staff whose work involves hazardous tasks, we are also concerned with the results of the examination results. In the case where an employee needs a job transfer due to health concerns, we will also conduct necessary measures accordingly on top of providing adequate protective gear based on said employee's work conditions and risk exposure levels. In response to the amendments to the Occupational Safety and Health Act, ECOVE ESC has established and continues to carry out four major protection schemes.

In 2019, 34 sessions of educational training (occupational health service and health promotions) were organized, in which nurses, occupational medicine doctors, and firefighters were invited to conduct risk evaluation and guidance at ECOVE plants; a series of seminars were also held to alleviate employees' work-related stress and to increase the health awareness levels for all ECOVE staff .



Lecture on Hidden Disease Prevention and Healthcare

2019 Occupational Health Services & Health Promotion Activities	Round	Total Number of Participants <sup>Note 1</sup>	Coverage Ratio(%) <sup>Note 2</sup>
The Danger of PM2.5 - education training	1	27	100%
Dehydration prevention and heat exhaustion prevention training	7	196	100%
Occupational disease prevention training	1	21	100%
Ergonomic hazard prevention training	2	45	100%
Abnormal workload training	1	37	100%
Prevention of illegal harm during execution of duties	2	53	100%
AED and CPR training	6	178	100%
Health education (three-hypers series, smoking prevention, dust, and noise)	14	370	100%

Note 1 : The data in this table already cover those of subsidiaries.

Note 2 : Coverage ratio = (Number of actual trainees / Number of assigned trainees) x100%.

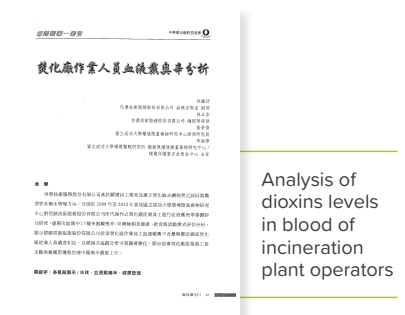
## Dioxin Tracking Test for 16 Consecutive Years

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 four years, and it has since conducted three tests (the fourth test is scheduled in 2020). Cross comparison is also carried out based on the evaluation questionnaire on employees' health, diet and occupational exposure. The results showed that the blood dioxin concentration of the employees tested was roughly the same as that of the general public and that recommended by the World Health Organization. This is because EfW plants operated and managed by ECOVE have complete and effective air pollution prevention measures. In addition, the Company has improved the implementation of employees' health and safety education,

including providing appropriate personal protective equipment. The relevant results have been published in the academic journal. It is not only the first in Taiwan, but also one of the best in the world.



ECOVE was invited by ISWA to publish a paper at the international conference in Taiwan.



Analysis of dioxins levels in blood of incineration plant operators

## Healthy Week

Based on employees' health checkup results, "Healthy Week" activities are organized each year. In 2019, a series of HSE activities were held, whose themes included sports (Exercise 99), health promotion, and healthy diet (Vegetables and Fruits 5.7.9).

Year	2015	2016	2017	2018	2019
Theme	Aerobics 123 and Health 123	Smart Diet, Happy Exercise, and Daily Weight Measurement	Healthy Diet against Cardiovascular Diseases	LOHAS Living and to Stay Fit	Exercise 99, Health Promotion, and Vegetables and Fruits 5.7.9



— HSE Activity - weight and BMI measurement
— HSE Activity - blood pressure measurement
— HSE Activity - health exercise

## CSR Moment

CTCI has been initiating Safety Moment activities since 2017. Safety Moment needs to be carried out at the beginning of every meeting of five persons or above. Different from traditional classroom lectures or a top-down advocacy, Safety Moment allows every employee to share their experiences. We aspire that by sharing about safety awareness and reflecting upon recent work-related incidents or the news, the speaker and reader could remember about safety more clearly as well as to interact with everyone and to mutually remind each other of the importance of each aspect of safety, health, or environmental protection.

To improve the efficiency and coverage of Safety Moment activities, Safety Moment was changed to CSR (Corporate Social Responsibility) Moment in 2019, with the scope extending to contractors and stakeholders, incorporating CSR into ECOVE's corporate culture.



Spoken confirmation of serial number of equipment to be initiated

## Third-party Vendor Forum Evaluation and HSE Slogan Contest

As one of the HSE activities, the third-party forum evaluation evaluates the health, safety, and environment of contractors on-site and selects those with outstanding safety performance as models for public commendation. We also invite contractors with outstanding safety performance to share their experience in HSE management so that all contractors can learn from each other and improve their HSE management practices. To incorporate safety into our corporate culture, we also organize the HSE slogan contest to vote for the best safety slogans proposed by employees.



HSE Activity - third-party vendor receives the Safety Performance Best Contribution Award.

HSE Activity - Third-party Vendor Forum Evaluation



HSE Activity - Third-party Vendor Forum Evaluation



HSE Activity - HSE Slogan Contest



## Awards

To actively foster a culture of safety and health and to strengthen the autonomous management over safety and health, ECOVE ESC encourages each department to participate in external safety and health assessment. Numerous awards have been won, demonstrating that our outstanding performance in advocating for safety and health have received awards and positive recognition from external parties.



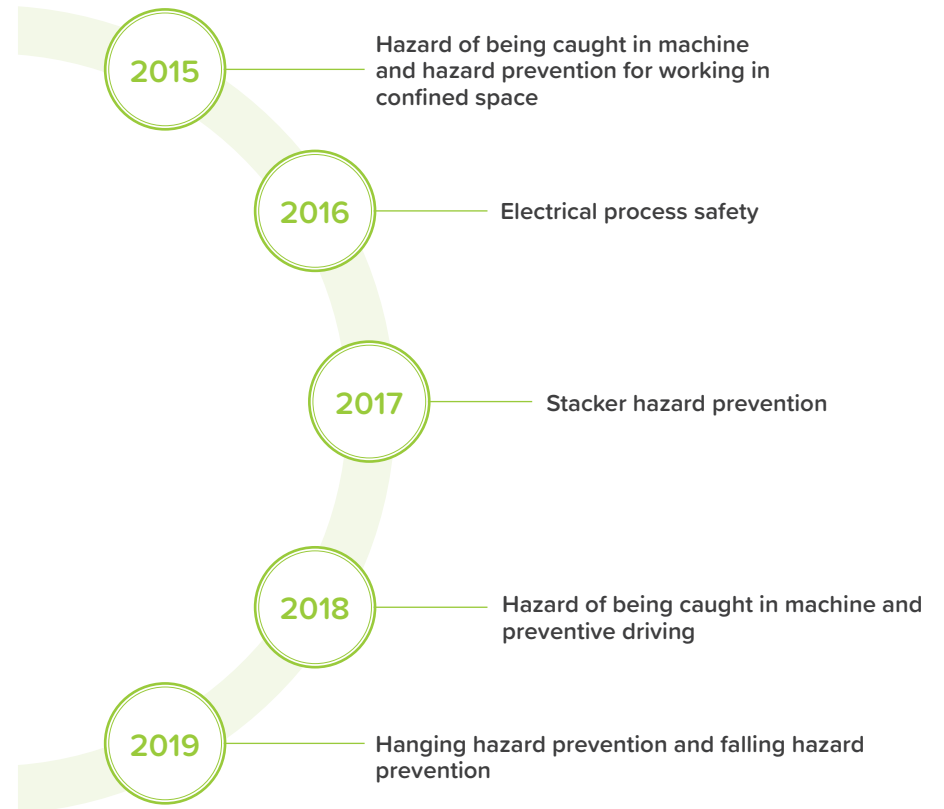
Excellent Industrial Safety Entity Award from Southern Taiwan Science Park Bureau, MOST



Occupational Safety and Health Excellent Employee Award - Performance Award (occupational safety and health officer) from Ministry of Labor

## Occupational Safety and Health Management and Future Outlook

Besides setting work standards to various processes and providing personnel training, ECOVE also confirms the feasibility of work standards through inspections of material activities to fulfill the objective of safe processes. In addition, to prevent the occurrence of any occupational disaster, the annual safety and health promotional objective from the Ministry of Labor is introduced to annual HSE activities, on top of reviewing all false alarms or work-related incidents. The themes for the Work Safety Week organized for the past five years have also focused on promoting a well-rounded culture of safety, including "the road to safety" and "the appropriateness of the system." Furthermore, pointing and calling has been introduced to our sites and first began at processes with higher risk and frequency. By confirming each key process, we can reduce employees' hazard exposure and promote safety and health at each turn.





As a corporate citizen, besides being committed to the Company's Operations and Environmental protection requires Management, giving back to the society and fulfilling corporate social responsibility have always been the philosophy and goal ECOVE adheres to. Hence, apart from advancing in its main business, the Company is committed in long-term social participation with specific themes. The three main themes are, linking Operations and Management with community activities, building a lasting community, and friendly and common good corporate volunteering. It encourages employees to participate in happy and meaningful volunteer activities, and contribute to the society through actual action, striking a balance between work and life. In 2019, 1,209 employees participated in volunteer service, with a total of 4,056 hours, and there were 208 environmental education courses conducted, with a total of 10,326 participants.

**Operations and Management-related Community Activities**

- Taiwan in My Eyes-120h
- Step by step: Factories for sustainable environmental education
- Environmental education facilities, cultivate green future

**Long-term Community Building**

- Get along with neighbors, integrate into community
- Safeguard community environment, be a good neighbor

**Friendly Corporate Volunteering**

- Friendly charity, concern for the disadvantaged
- Response to international initiatives, environmental sustainability

## Operations and Management-related Community Activities

Environmental education and environmental channels to promote public participation. Hence, ECOVE actively promotes environmental education, and five of its operation plants have obtained Environmental Education Facilities Certification. They are entertaining

and educational centers for environmental protection, as well as designated visiting facilities for the international event, "Taiwan in My Eyes-120h." Together with CTCI Education Foundation (CTCI EF), ECOVE launches the 3-year "Step by step: Factories for

Sustainable Environmental Education" project, taking the initiative to reach out to Taiwan's elementary schools, teaching our future leaders about sustainable lifestyle.



### 「Taiwan in My Eyes-120h」

CTCI Education Foundation (CTCI EF) and Center for Corporate Sustainability (CCS) have been organizing the international event, "Taiwan in My Eyes-120h," in response to the United Nations' Sustainable Development Goals (SDGs). In 2019, students of 11 universities/colleges from 22 countries participated in the 5th Taiwan in My Eyes- 120h (winter and summer

actions). Each year, participants are scheduled to visit leading enterprises in Taiwan. The Miaoli Plant has been designated as the visiting site for three years in a row. Operating in coordination with the incineration plant, Green DreamWorks, its environmental education facility, demonstrates the concept of sustainability. Under the guide of our environmental education

volunteers, participants learn Taiwan's environmental achievements and new knowledge in resource cycling and waste disposal. After the visit, they express their thoughts to the world via social media such as Facebook so that the world can see Taiwan's sustainability accomplishments.



- Students from various countries listen to ECOVE's practices to prevent environmental pollution.



- Group photo of students from various countries at Miaoli Plant.



- Miaoli Plant has been the designated visiting site for Taiwan in My Eyes-120h for three consecutive years.





## Step by Step: Factories for Sustainable Environmental Education

To allow the next generation to learn about the relationship between human and natural environment, and between human and man-made environment (include society, economy, etc.) and to cultivate the basic concept, values and appropriate sustainable lifestyle for the environment, ECOVE has been cooperating with the CTCI Education Foundation (CTCI EF) since 2018, targeting at elementary schools in the country, in organizing the 3-year "Step by Step: Factories for Sustainable Environmental Education" project. It deepens its roots in Taiwan and reaches out to campuses to promote environmental education, teaching the children about a sustainable lifestyle. In

2019, the event was well-received, and 30% of the sessions were held at the schools participating in 2018. The teaching materials of this event are based on ECOVE's main business energy (i.e., from waste and recycling), with content designed for different ages. It has DIY courses, including handmade fans using recycled paper and reuse of seeds, which incorporate environmental protection concepts, and are promoted in line with current environmental topics. Students can learn about the concept of Energy-from-Waste, Eco Label, garbage classification, etc., in an entertaining and educational learning process. Another theme in 2019 is "Love the Earth: Say No to Plastics." Through a

movie, the children learned that there were 100 million tons of plastic waste in the ocean, inspiring the children to refuse plastic bags. In 2019, a total of 22 sessions were conducted at elementary schools across Taiwan, including Huaxing Elementary School in Keelung and Kanding Elementary School in Pingtung, and 3,153 students participated. ECOVE hopes that through the three years of continuous promotion, environmental education can influence the families through the students, and expand to the neighborhood and society, attaining a beautiful living environment.



ECOVE executives lead the environmental education team to promote the project at Huaxing Elementary School in Keelung.

The environmental education team explains the eco label to students of Houli Elementary School in Taichung.



### Social Benefits of 3-year Plan: Step by Step: Factories for Sustainable Environmental Education (2018~2020)

	2019	2018
Round	22	22
Number of Participants	3,153	3,171
* Achievement Rate of Increasing Students' Awareness of Sustainability and Environmental Protection	96%	91%
* Achievement Rate of Exerting Social Influence through Sustainable Environmental Education	96%	91%

\* Based on the responses to the after-class questionnaire.





## Environmental Education Facilities for a Green Future

Environmental education facilities refer to professional facilities on land regions with environmental education resources, incorporating professional environmental education capabilities, professional courses and appropriate environmental education resources, to provide professional environmental education for school students and general public, in attaining the goals of education, research, conservation, culture and recreation. This is in line with ECOVE's aim of cooperating with and contributing to the community. Hence, ECOVE actively participates in

environmental education facilities certification, and base on the humanity, geographical and ecological characteristics of its plant, designs diversified courses by incorporating the concepts of energy-saving, water-saving and carbon-reduction. It has currently obtained five environmental education facility certificates, where Miaoli and STSP Resource Recycling Center were awarded the highest "5-star" certification. ECOVE's environmental education facilities not only have employees who are trained and certified as lecturers, but also have rich and interactive courses.

Its environmental education attracts more than 1,700 people every quarter. In 2019, ECOVE provided 186 sessions of environmental education services, attended by 7,173 people. Among these sessions, 396 participants in 27 sessions came from Beijing, Guangzhou, Vietnam, Laos, Malaysia, and Nepal. With environmental education facilities, ECOVE not only fosters a green future, but also maneuvers the power of civil diplomacy to make Taiwan's environmental achievements seen and recognized internationally.



- Tainan Science Park Plant explains the incineration process with teaching aids made of corrugated paper.



- Group photo of the delegation from European Bank For Reconstruction and Development and Miaoli Plant's environmental education facility ambassadors



- Nepalese officials listen to the briefing on garbage mixing in the crane room of the Miaoli Plant.



- Senior energy experts from Asian Development Bank listen to a brief introduction to the incineration process.



- The director of Keelung Plant explains the waste incineration process to the overseas Chinese students of National Taipei University of Technology.



- A delegation from Laos' energy and mining industry visits Wurih Plant.

## ECOVE's Environmental Education Facilities Certification

Plant	Environmental Education Highlights
 <p>Miaoli Plant</p>	<p>Based on the conception of Green DreamWorks, five fictitious mascots from outer space with different personalities and expertise come to the Earth to perform different environmental protection tasks, which represent the environmental actions of the incineration plant. Through theme-specific exhibitions, interactive games, and online multimedia functions, visitors can learn more information on the incineration plant's Operations and Management and environmental protection practices, creating an entertaining and educational venue for environmental education.</p>
 <p>Keelung Plant</p>	<p>With rich and diverse teaching experience, our environmental education volunteers explain that waste incineration has its value in spite of imperfections. For example, the previous sanitary landfill was transformed into a rehabilitation park. We hope to inspire visitors to take care of and care for the environment on their own initiatives so that this planet will subsist.</p>
 <p>Tainan Science Park Plant</p>	<p>We turn the concept and practice of sustainable production into environmental education, which consists of three series of courses using the existing resources and characteristics: water resources, waste treatment and nature conservation.</p>
 <p>Tainan Plant</p>	<p>Combined with cultural and natural features, Tainan Plant provides energy-from-waste services while serving as a premium environmental education facility with main teaching subjects covering waste incineration cogeneration, resource recycling DIY, and food waste composting.</p>
 <p>Houli Plant</p>	<p>The focus of environmental education is energy from waste (EfW) and conservation of Dajia River. Visitors learn how the incineration plant deal with garbage disposal based on the principles and objectives of stabilization, sanitation and recycling. In the section, "History of Dajia River," visitors can fully understand the sewage treatment and water quality monitoring system and further acknowledge the importance of water conservation.</p>

Note : Miaoli Plant and STSP STSP Resource Recycling Center were awarded 5-star certification.



Students of Wulun Elementary School visit Keelung Plant and learn the added value of garbage incineration in a simulated power generation experiment.



Students of Hsing Kuo Senior High School visit Tainan Plant to learn the incineration process.

Activity

Various site visits.



Attendee

Schools, authorities and communities are all welcome.



How to Apply

Email our CSR specialists through [ecovecsr@ecove.com](mailto:ecovecsr@ecove.com)



Our environmental education team provides a variety of environmental education courses on incineration and power generation, day-to-day environmental protection, recycling DIY, and other topics for free. Applications are welcome!



## Long-term Community Building

Several operating premises of ECOVE used to be places where the neighbors keep away from, as they give 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 cleanup, participates in community activities,

builds environmental protection facilities, and maintains a quality and safe living environment, transforming the place which people keep away from, into a facility welcome by everyone.

## Get Along with Neighbors, Integrate into Community

As a corporate citizen, ECOVE emphasizes interactions with the community and seeks common good with the neighborhoods. This year, Linkou Water Resource Center incorporated 3C technologies into environmental education to introduce a smartphone microscope. Through interactive games, the public could observe microorganism in the water, learn about domestic wastewater treatment, and cultivate the concept of conserving water resources. Houli Plant, which is situated in an old community in Taichung, has been organizing the annual "Cultural Festival in

Old Neighborhood" for 16 years. The event combines inherent traditional culture and new environmental protection concept, making it a characteristic of exchange and heritage. Surrounded by abundant environmental resources, the Tainan Plant has proactively participated in the "Sustainable Ecology and Renewable Energy Industry in Annan District" to support the development of ecology and renewable energy industries in Annan District, Tainan City and to increase the residents' awareness of local ecology and industrial development. Besides contributing manpower

and resources to the community, ECOVE's staff, including employees and top management, actively participate in events organized by the community. In 2019, ECOVE's executives and employees, together with their families, could be spotted in events such as Miaoli's "Environmental Education Carnival," Houli's "Cycling in Houli," Wurih's "Yuque Zhaoren Temple Pilgrimage," STSP's "2019 Sports Activity," STSP's "Night Run at Yingxi Lake," and Macau's "Walk for Millions," reflecting ECOVE's passion for engaging in the community activities.



Miaoli Plant set up a booth at the Environmental Education Carnival to promote its environmental education facility.



Linkou Water Resource Center incorporated 3C technologies into environmental education to introduce a smartphone microscope.



Houli Plant participates in the cultural festival in the old neighborhood every year.



Employees of STSP Plant and their family members participate in the 2019 Sports Activity.



## Safeguard Community Environment, Be a Good Neighbor

ECOVE is a pioneer in green enterprises, as well as a good neighbor. Throughout the years, it has been sparing no effort in maintaining the environment of the plant and its surrounding by conducting regular and unscheduled road cleaning, reducing dust, planting flowers and trees and restoring lawns to increase greenery, and recycling waste for installation art, creating a quality living environment and cityscape. ECOVE's operating plants located in coastal areas such as Keelung, Miaoli and Tainan organize coastal cleanup activities. Though the effect of coastal cleanup activities is limited in reducing ocean garbage, it stimulates employees' environmental awareness, implementing plastic reduction and refusal of plastic in everyday life. In 2019, ECOVE accumulated 768 hours of community service, organized four coastal cleanups, and collected 397 kg of garbage. When the relationship between enterprise and society becomes closer, the role of enterprise is not only to create output value, but also to create its own "value." We believe that with the participation of business partners in the future, we will inject a stronger energy into the community, and we'd be able to implement friendly and common good and sustainable lifestyle.



• Cattle egrets at Miaoli Plant wetlands.



• Taoyuan South Region Plant builds a green corridor.



• STSP Plant creates giraffe installation art from scrap.



• Miaoli Plant turns waste furnace pipes into crab and batman benches, showing its power of reuse.



• STSP Plant holds a beach cleanup activity, taking action to reduce plastics and to protect the ocean.



• Keelung Plant holds a beach cleanup activity, calling on the employees and family members to protect the ocean.



• Family beach cleanup activities.



• Miaoli Plant staff cleaning streets for the neighborhood.





## Friendly Corporate Volunteering

Employees from ECOVE set up "Friendly Charity Society" and take the initiative in organizing 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

ECOVE established the Friendly Charity Society in 2017, and this platform is open to employees to propose care actions and to share ideas on public welfare and innovative charitable activities. Two projects were conducted in 2019, namely, computer donation for

under-served neighborhood and welfare for mentally challenged children. In addition, ECOVE continued to organize activities to make donations such as receipts, second-hand clothes, and used books.



ECOVE has donated computers to the under-served neighborhood for three years in a row.



Keelung Plant recycles second-hand clothes to fulfill the reuse of waste.



Miaoli Plant donates receipts to spread the love.

Our volunteers visit children with intellectual development disorders at Renyou Sanatorium and advocate eating less meat and reducing carbon emissions.



ECOVE receives the certificate of appreciation for donating used books.



ECOVE receives the certificate of appreciation from the Sunshine Social Welfare Foundation for donating receipts.

## Response to International Initiatives

ECOVE takes the initiative in responding to international initiatives. Our employees act as initiative ambassadors to raise colleagues' awareness of issues such as climate change and environmental

protection. We also organize activities to incorporate environmental issues into employees' daily lives. Faced by global climate change, we emphasize that each employee has the ability and responsibility to change

the world and should take action to care for our homeland and protect this planet.



In response to international initiatives, ECOVE incorporated environmental issues into employees' daily lives while maintaining employees' health in 2019.

### Earth Hour

We proactively participated in the "Earth Hour" initiative by turning off the lights at each unit for one hour on that day, setting the week as the Energy Conservation Week, and holding a "light-off activity" in summer and winter respectively to incorporate environmental issues into employees' daily lives, making energy conservation a habit.

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，  
2019.03.25-2019.03.30  
各據點每日關燈一小時。

THIS  
EARTH HOUR  
我支持地球一小時





### Earth Day

In response to the Earth Day 2019: Protect Our Species, each of our plants and operating sites took part in the "Office Greenery" initiative by decorating the office with potted plants in hopes of improving productivity and reducing carbon at the same time. ECOVE also devoted all its energies to biodiversity. For example, the Keelung Plant cooperated with the Chinese Wild Bird Federation to promote the conservation of black kites through environmental education. As Taiwan's only incineration plant that is located on the wetland, the Miaoli Plant veered and reduced the site area by 1 hectare at the planning stage given the conservation of the wetland; in recent years, it has also cooperated with the local community to restore purple butterflies. After finding spiranthes sinensis, the Linkou Water Resource Center began to transplant and grow it carefully; currently, it grows well and is the best teaching material for environmental education.



### World Oceans Day

Responding to "Cutting out Plastic on World Oceans Day," ECOVE launched the "Use Chopsticks, Love the Earth" initiative to say no to the use of disposable cutlery; in addition, ECOVE organized four beach cleanup activities. Although the activities had a limited effect on reducing marine debris, they raised employees' awareness of environmental protection and plastic footprint reduction in their daily lives.



### World Vegetarian Day

In response to the World Vegetarian Day, ECOVE organized the "Eating Greens" initiative to alert employees to the relationship between meat and global warming and health.



### World Diabetes Day

By participating in the World Diabetes Day, we alerted employees to the importance of their health and also organized the "Take the Stairs, Reduce Carbon Footprint" activity. Employees were encouraged to take stairs instead of taking elevators in their daily lives, making "More Steps, More Healthier" not just a slogan.



## Response to International Initiatives for Energy Conservation and Carbon Reduction

Initiative	Action Plan	Description of Action Plan	Carbon Reduction
Earth Hour	Energy Conservation Week	Turning off light and air- conditioning for one hour during lunch break reduced 1,034 kg of carbon emissions per year (according to the 2018 electric power emission factor published by the Bureau of Energy ; each kWh emits about 0.533 kg of CO <sub>2</sub> e).	1,034 Kg
	Energy Conservation in Winter Light off in Summer	Turning off light and air- conditioning for one hour during lunch break reduced 5,878 kg of carbon emissions per year (according to the 2018 electric power emission factor published by the Bureau of Energy ; each kWh emits about 0.533 kg of CO <sub>2</sub> e).	5,878 Kg
Earth Day	Office Greenery	The carbon fixation of Devil's ivy is 0.00181 kg/m <sup>2</sup> -day. Assuming that we place 100 plants with a diameter of 10 cm every square meters, they absorbed carbon of 11.93 m <sup>2</sup> × 0.00181 kg/m <sup>2</sup> -day × 365 day = 8 kg per year.	8 Kg
	Old Clothes Donation	Donating 347 pieces of clothing reduced 1,457 kg CO <sub>2</sub> e (one piece of clothing reduces CO <sub>2</sub> emission by 4.2 kg CO <sub>2</sub> e).	1,457 Kg
World Oceans Day	Use Chopsticks, Love the Earth	Not using disposable chopsticks for 25,579 meals reduced 2,558 kg CO <sub>2</sub> e (not using disposable cutlery for a meal reduces about 0.1 kg CO <sub>2</sub> e).	2,558 Kg
	ECOVE Beach Cleanup	The beach cleanup activities removed a total of 396.5 kg of garbage (carbon reduction per kg of garbage = 2.06 t CO <sub>2</sub> e/t garbage).	817 Kg
World Vegetarian Day	Eating Greens	Having 10,071 vegetarian meals reduced carbon emissions of 2,216 kg CO <sub>2</sub> e (based on the carbon reduction of 0.22 kg CO <sub>2</sub> e per vegetarian meal).	2,216 Kg
World Diabetes Day	Take the Stairs, Reduce Carbon Footprint	Climbing stairs during commuting achieved the goals of exercising and carbon reduction, attaining the carbon reduction of 564 kg CO <sub>2</sub> e (based on the carbon reduction of 0.22 kg CO <sub>2</sub> e per floor climbed).	564 Kg
<b>Total</b>			<b>14,532 kgCO<sub>2</sub>e</b>

Note: The carbon reduction efficiency is calculated based on the National Greenhouse Gas (GHG) Registry under the Environmental Protection Administration, Executive Yuan.





"Use Chopsticks, Love the Earth" Initiative



"Office Greenery" Initiative



"Use Chopsticks, Love the Earth" Initiative, saving the ocean!



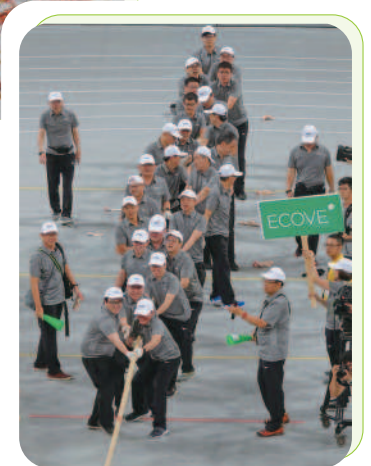
Light off during lunch break

## Sports Day

ECOVE attaches great importance to the physical and mental health of employees. We hold the Sports Day every two years, allowing employees to put work stress away and simply enjoy the benefits of exercise. The 2019 Sports Day was grandly held at the Taipei Heping Basketball Gymnasium on October 5. All participants went all out in the games and stayed friends outside the venue. Everyone had a lively and fulfilling day. The award ceremony and lucky draw ended the event joyously. By holding various games, ECOVE hoped to ignite employees' morale and consensus, so as to achieve remarkable success in the following year.



All players and cheerleaders take a group picture to show the team momentum.



ECOVE organizes the tug of war to build teamwork.



Participants in the fun game use tactics to capture the flag.

# Most reliable

## CSR Hour - Sharing of CSR Information

Employees are ECOVE's largest asset. We have spared no effort to cultivate our employees as we believe that employees are the driving force for the Company's continuous growth and the cornerstone of the Company's fulfillment of corporate social responsibility. We not only provide diversified learning channels and training resources in line with our brand vision, but also expect employees to work and grow together with the Company. ECOVE provides employees professional knowledge and functional training according to the needs of different positions; in addition, we also develop employees' soft capabilities so that employees are equipped to adjust themselves to the work stress properly in addition to performing well; they are willing to share their feelings with their family members so that their family members can identify with them and become their strongest backing, achieving work- life balance.

Given that our employees are located in various locations at home and abroad, we have an online communication platform named "CSR Hour" in place, in addition to existing health seminars, to achieve the aforesaid goals. CSR Hour is sent to all employees at 3:00 pm every Friday to provide employees Hot News, new knowledge, CSR activities, and other related information. It also shares some daily events of operating sites. In 2019, the theme was "Sharing." CSR Hour was distributed every week for 52 consecutive weeks.

The platform sends soft data such as CSR event information to increase employees' interest in CSR and also shares CSR stories from time to time to expand employees' knowledge (e.g., Earth Hour) in a simple way in hopes of raising employees' CSR awareness. In addition, letters of appreciation for our employees' righteous deeds are also shared with all employees via the platform. On the eve of festivals, a health reminder will be sent to employees, creating an opportunity for employees to communicate with their family members.

From: Shu-Chen Ho/ 何淑貞 /ECOVE ESC-PLD <hojane@ecove.com>  
 Sent: Friday, May 29, 2020 4:56 PM  
 To: San Chiu/ 邱三 /ECOVE-MDD <mike@ecove.com>; Chung-Ning Chiang/ 江重寧 /ECOVE-EMO <jiang@ecove.com>; Chen-Tao Li/ 李晨韜 /ECOVE-EMO <blueskyson0854@ecove.com>; Eric Tiao/ 刁秀華 /ECOVE ESC-EMO <ericiao@ecove.com>; Chung-Shin Wu/ 吳宗欣 /ECOVE ESC-EMO <chung-shin.wu@ecove.com>; Szu-Han Wang/ 王恩涵 /ECOVE ESC-HRAD <szu-han.wang@ecove.com>; Chia-Chun Wang/ 王家駿 /ECOVE ESC-HRAD <jhkc@ecove.com>; Chih-Teng Chu/ 朱志騰 /ECOVE ESC-PJD2 <chihteng.chu@ecove.com>; Hsien-Yung Chiang/ 江顯勇 /ECOVE ESC-HRAD <pospo@ecove.com>; Pei-Ching Wu/ 吳佩靜 /ECOVE ESC-HRAD <pei-ching.wu@ecove.com>; Shu-Hui Chou/ 周淑慧 /ECOVE ESC-HRAD <shuhui.chou@ecove.com>; Che-Min Lin/ 林哲民 /ECOVE ESC-HRAD <che-min.lin@ecove.com>; Hui-Tzu Lin/ 林惠慈 /ECOVE ESC-HRAD <hui-tzu.lin@ecove.com>; Wei-Ting Lin/ 林薇婷 /ECOVE ESC-HRAD <vivieltv@ecove.com>; Hsiu-Fang Ma/ 馬秀芳 /ECOVE ESC-HRAD <suger@ecove.com>; Wen-Hao Chen/ 陳文豪 /ECOVE.....

### CSR 小時光分享你和我

親愛的夥伴們：  
 台灣永續能源研究基金會正在舉辦繪畫比賽。是的，高手就在 ECOVE 大家庭裡！CSR 小時光熱烈邀請同仁家中的大、小朋友多多參賽，最高獎金 8 仟元囉！讓我們一起透過分享串連你和我，讓 ECOVE 帶給大家的想法、情感，一起在彼此間流動。  
 英國科學家培根說：「如果你把快樂告訴一個朋友，你將得到兩個快樂。」是的，ECOVE 的 CSR 也是如此，在分享之後，我們將會有加倍的認知、加倍的歡喜。

企劃室 敬上



CSR Hour invites employees and their family members to participate in an external CSR activity.

親愛的夥伴們：  
 下週我們即將推出 11/14 世界糖尿病日關注健康的活動，猜猜看本次 ECOVE 的倡議大使會是誰呢？同仁的健康是 ECOVE 的心願，ECOVE 也有常駐的護理師 (潘舜卉 TEL:04-2335-9491#218)，不僅負責定期辦理健康檢查、健康講座等健康促進活動，也處理日常的個人衛教諮詢，協助同仁解決健康大小事本週 CSR 小時光除了要分享同仁們在工作上的心得感想外，還要請夥伴們先來了解一下「世界糖尿病日」的涵義。

CSR 小學堂 - 世界糖尿病日  
 1919 年春天 11 歲的少女伊莉莎白·休斯發現患糖尿病，由於口乾，一杯又一杯地喝水，常覺得虛弱和疲憊。當時她的體重只有 34 公斤，一年之後只剩下 24 公斤，1921 年外科醫師班丁 (F.G.Banting) 發現胰島素，1922 年 14 歲瀕危的男孩湯姆遜成為第一個注射胰島素救活的病人。1922 年在死亡邊緣徘徊的 15 歲的伊莉莎白·休斯接受班丁醫師的胰島素治療，每天在胰島素的治療及良好的血糖控制下，過著健康正常的生活，她前後生了三個小孩，1980 年夏天仍舊耳聰目明，前往中國從事為期六週的旅遊。1981 年因心臟病發作去世，享年 73 歲，1992 年世界糖尿病聯盟為了感謝班丁醫師這位糖尿病病人救命的恩人，同時，為喚起全世界對糖尿病危害的關注，決定每年以班丁醫師的生日 11 月 14 日為世界糖尿病日，這就是世界糖尿病日的由來。

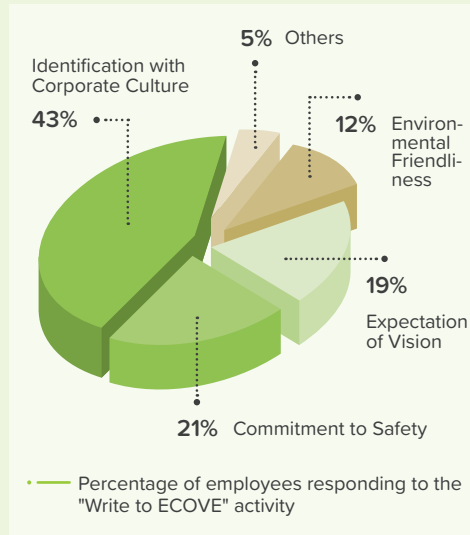
企劃室 敬上



CSR Hour shares a CSR story about employees' health.



CSR Hour also launched the "Write to ECOVE" activity in 2019, where employees wrote down their feelings about the Company and CSR. The response rate was 91%. The employees' letters indicated that CSR Hour had changed and influenced employees unobtrusively and imperceptibly. Through this shared language, our employees began to be aware that their work is their vocation and that CSR is ECOVE's corporate culture and routine. Employee also stated that they could learn other colleagues' practices through CSR Hour and thus paid more attention to energy conservation and carbon reduction in everyday lives; besides, they practiced environmental initiatives and talked about environmental issues at plant and team levels at their leisure. CSR stories also became the subjects of talks with their children at home.



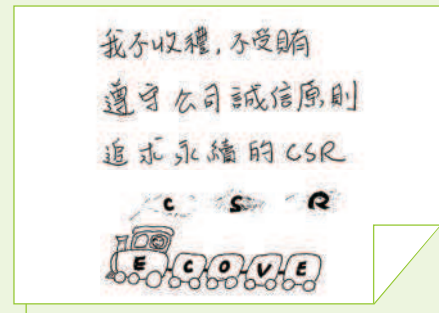
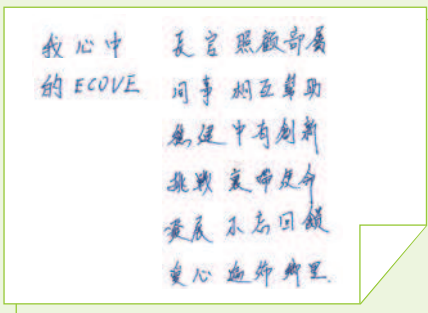
Through 365 days of soft training, CSR Hour inspired employees to work together toward the fulfillment of CSR; therefore, it built even stronger cohesion among employees and pushed employees to perform their duties well. CSR Hour has created a greater competitive advantage for ECOVE. It is such efforts that made ECOVE the recipient of the Excellence Award in the 1st National Corporate Environment Protection Award and the 1st place in the Excellence in Corporate Social Responsibility Award from Commonwealth Magazine in 2019. We called on all employees to practice CSR in their daily lives, together creating value other than output value.

ECOVE 這個團隊不大，但我們每天都一起打拼，一起走在社會共好的路上，ECOVE 這個團隊走過了 20 多個年頭，我們當貴當仁，讓企業社會責任的參與成為一件容易、有溫度而且深刻的事情。ECOVE 這個團隊的每個人都都不偉大，但我們相信我們的行動與努力掙淺移默化地改變這個社會！  
打開 CSR 小時光，讓我們一起看見 ECOVE 好夥伴的正面力量！

推己及人，感謝與信賴



CSR Hour shares the employees' good deeds.



Employees' expectations and thanks to the Company in the "Write to ECOVE" activity



Each operating site shares CSR Hour through a group and in a morning meeting.

# Appendix



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- 92 GRI Standards Index
- 97 Statement of Third-party Assurance




# About This Report

## Reporting Policy

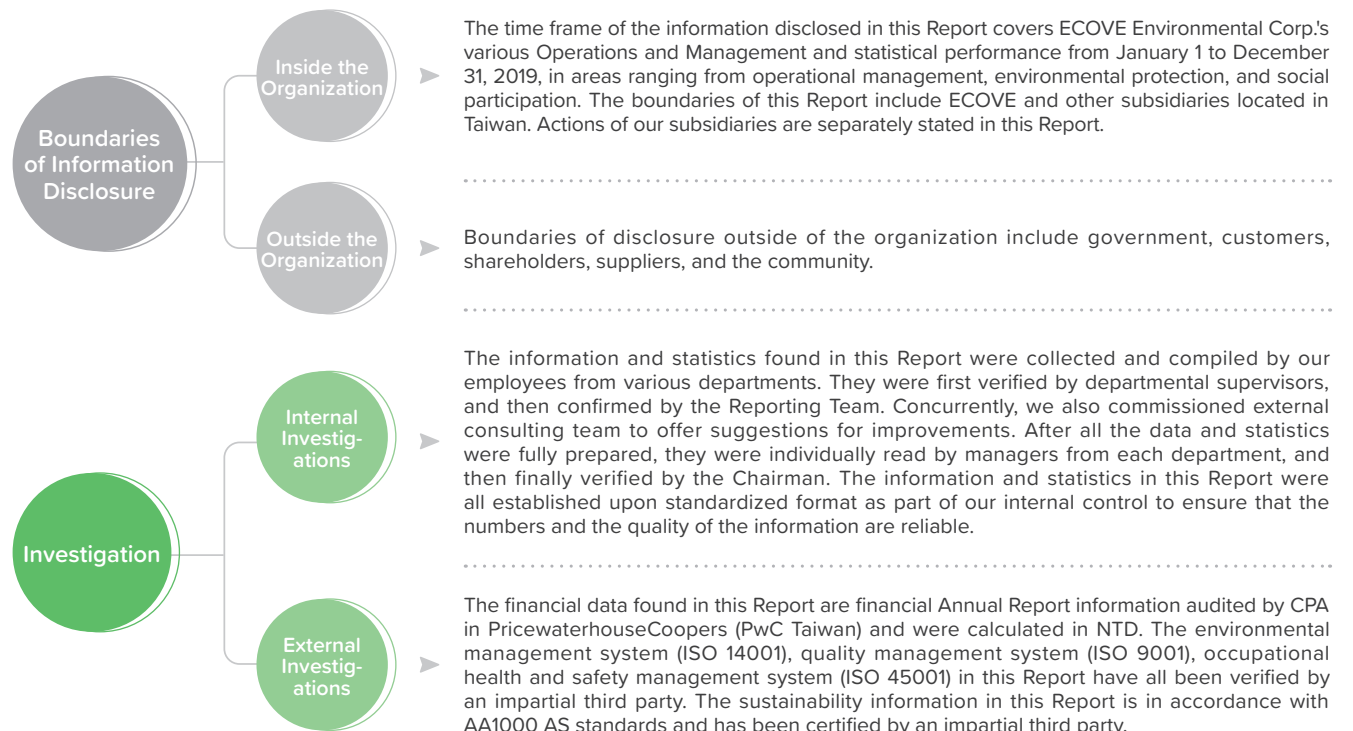
Ecove Environment Corp. (hereinafter referred to as "ECOVE" or "the Company") has published Corporate Social Responsibility Report ("CSR Report") for ten consecutive years since 2010. We actively disclose non-financial information to all stakeholders concerned about ECOVE to continue spreading our sustainable management actions, and to fully communicate with stakeholders and to respond to their needs. The 2019 CSR Report was published on June 2020, and the following Report is scheduled to be released in June 2021.

Time Period of Information Disclosure	GRI Level	Assurance Level	Third-party Verification/Assurance
January 1, 2019 to December 31, 2019	GRI Standards Options	Type II - high level of assurance	<ul style="list-style-type: none"> <li>Financial data from PricewaterhouseCoopers (PwC Taiwan)</li> <li>Quality management - ISO 9001:2008</li> <li>Environmental management - ISO14001:2015</li> <li>Greenhouse gas inventory - ISO14064:2006</li> <li>Occupational health and safety management - ISO 45001:2018</li> <li>Sustainability data - AA 1000 AS:2008</li> </ul>

### Contact Information



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# GRI Standards Index

## Management Approach and Disclosure of Material Issues

Major Issue	Series	Disclosed Item	Description	Corresponding Sections and Chapters	Page
Integrity and Business Ethics	GRI 205 Anti-corruption	103-1	The management approach and its components	Materiality Analysis	13
		103-2	Management policy and its elements	Materiality Analysis (Short-term, Medium-term, and Long-term Goals for Material Issues)	18-19
		103-3	Management policy assessment	Internal Control, Compliance	26
		205-1	Operations and Management assessed for risks related to corruption	Compliance	26
		205-2	Communication and training about anti-corruption policies and procedures	Compliance	26
		205-3	Confirmed incidents of corruption and actions taken	Compliance	26
		103-1	The management approach and its components	Materiality Analysis	13
Power Generation Efficiency	GRI302 Energy	103-2	Management policy and its elements	Materiality Analysis (Short-term, Medium-term, and Long-term Goals for Material Issues)	18-19
		103-3	Management policy assessment	Energy and Resource Conservation	54
		302-4	Reduction of energy consumption	Energy and Resource Conservation	54
		302-5	Reductions in the energy requirements of products and services	Energy and Resource Conservation	54
Development of Renewable Energy	Development of Renewable Energy (Specific to ECOVE)	103-1	The management approach and its components	Materiality Analysis	13
		103-2	Management policy and its elements	Materiality Analysis (Short-term, Medium-term, and Long-term Goals for Material Issues)	18-19
		103-3	Management policy assessment	Circular and Low-carbon Economy	48
			Develop power generation benefits from renewable energy and set short, mid, and long-term power generation goals to expand investment opportunities	Circular and Low-carbon Economy	48
Professional Research & Development and Technical Competency	Professional Research & Development and Technical Competency (Specific to ECOVE)	103-1	The management approach and its components	Materiality Analysis	13
		103-2	Management policy and its elements	Materiality Analysis (Short-term, Medium-term, and Long-term Goals for Material Issues)	18-19
		103-3	Management policy assessment	Innovative Research and Development	33
			Enhance the management effectiveness of incineration plants that ECOVE operates, and provides waste clearing technical advise, environmental protection, pollution prevention engineering and equipment maintenance and sales agency, incineration plant improvement planning and design of various services	Innovative Research and Development	33

Major Issue	Series	Disclosed Item	Description	Corresponding Sections and Chapters	Page
Development of Recycling and Reuse	Development of Recycling and Reuse (Specific to ECOVE)	103-1	The management approach and its components	Materiality Analysis	13
		103-2	Management policy and its elements	Materiality Analysis (Short-term, Medium-term, and Long-term Goals for Material Issues)	18-19
		103-3	Management policy assessment	Innovative Research and Development	33
			Research resource cycling products, technologies, and supplier and sales competitiveness, as well as R&D of customized products and quality enhancement	Innovative Research and Development	33
Energy-from-Waste (EfW) / Air Pollution Prevention	GRI 305 Emissions	103-1	The management approach and its components	Materiality Analysis	13
		103-2	Management policy and its elements	Materiality Analysis (Short-term, Medium-term, and Long-term Goals for Material Issues)	18-19
		103-3	Management policy assessment	Energy from Waste (EfW)	44
		305-1	Direct (Scope 1) greenhouse gas (GHG) emissions	Energy from Waste (EfW)	44
		305-2	Energy indirect (Scope 2) greenhouse gas (GHG) emissions	Energy from Waste (EfW)	44
		305-7	NOx, SOx, and other significant air emissions	Real-time uploading to the Environmental Protection Administration via the continuous monitoring system	-
Employee Benefits and Compensations	GRI 401 Employment	103-1	The management approach and its components	Materiality Analysis	13
		103-2	Management policy and its elements	Materiality Analysis (Short-term, Medium-term, and Long-term Goals for Material Issues)	18-19
		103-3	Management policy assessment	Talent Composition and Compensations, Human Rights Protection and Benefits	61-65
		401-1	New employee hires and employee turnover	Talent Composition and Compensations	61
		401-2	Benefits for full-time employees	Human Rights Protection and Benefits	63
		401-3	Parental leave	Human Rights Protection and Benefits	63
Talent Retention and Recruitment	Talent Retention and Recruitment	103-1	The management approach and its components	Materiality Analysis	13
		103-2	Management policy and its elements	Materiality Analysis (Short-term, Medium-term, and Long-term Goals for Material Issues)	18-19
		103-3	Management policy assessment	Talent Development	66
		404-1	Average hours of training per year per employee	Talent Development	66
		404-2	Programs for upgrading employee skills and transition assistance programs	Talent Development	66
		404-3	Percentage of employees receiving regular performance and career development reviews	Talent Composition and Compensations	61

## GRI Content Index

GRI 102: General Disclosures			
Disclosed Item	Description	Corresponding Sections and Chapters	Page
102-1*	Name of organization	About ECOVE	04
102-2*	Events, brands, products and services	About ECOVE	04
102-3*	Headquarters	About ECOVE	04
102-4*	Bases of operation	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	61
102-9*	Supply chain aspect	Sustainable Supply Chain Management	35
102-10*	Significant changes to the organization and its supply chain	The Company's organizational structure and management rights did not experience significant changes during the reporting period	-
102-11*	Precautionary principle or approach	Risk Management	28
102-12*	External initiatives	Friendly Corporate Volunteering	83
102-13*	Membership of associations	Participation in External Entities	22
102-14*	Statement from senior decision maker	Messages from Chairman	02
102-15	Key impacts, risks, and opportunities	Internal Control System	26
		Risk Management	28
		Management Performance and Industry Outlook	30
102-16*	Values, principles, standards and norms of behavior	Compliance	26
102-17	Ethics-related recommendations and mechanisms of concern issues	Compliance	26
102-18*	Governance structure	Management Governance	24
102-19	Principle	CSR and Promotion Structure	11
102-20	Executive-level responsibility for economic, environmental, and social topics	CSR and Promotion Structure	11
102-21	Consulting stakeholders on economic, environmental, and social topics	CSR and Promotion Structure	11
102-22	Composition of the highest governance body and its committees	About ECOVE	24
102-23	Markets served	Management Governance	24
102-24	Events, brands, products and services	Management Governance	24
102-25	Conflict of Interest	Management Governance	24
102-26	The role of the highest governance unit in setting purposes, values and strategies	CSR and Promotion Structure	11
102-27	Collective knowledge of highest governance body	Management Governance	24



## GRI 102: General Disclosures

Disclosed Item	Description	Corresponding Sections and Chapters	Page
102-28	Evaluating the highest governance body's performance	Management Governance	24
102-29	Identifying and managing economic, environmental, and social impacts	CSR and Promotion Structure	11
102-30	The effectiveness of the risk management process	CSR and Promotion Structure	11
102-31	Review of economic, environmental, and social topics	CSR and Promotion Structure	11
102-32	Highest governance body's role in sustainability reporting	CSR and Promotion Structure	11
102-33	Communicating critical concerns	CSR and Promotion Structure	11
102-34	Nature and total number of critical concerns	CSR and Promotion Structure	11
102-36	Compensation decision process	Management Governance Talent Composition and Compensations	24 61
102-37	Stakeholder engagements	Management Governance	24
102-40*	List of stakeholder groups	Materiality Analysis	13
102-41*	Collective bargaining agreements	Not signed	-
102-42*	Identifying and selecting stakeholders	Materiality Analysis	13
102-43*	Approach to stakeholder engagement	Materiality Analysis	13
102-44*	Key topics and concerns raised	Materiality Analysis	13
102-45*	Entities included in the consolidated financial statements	Management Performance and Industry Outlook	30
102-46*	Defining report content and subject boundary	About This Report	91
102-47*	List of material topics	Materiality Analysis	13
102-48*	Restatements of information	No restatements	-
102-49*	Changes in reporting	No significant changes	-
102-50*	Reporting period	About This Report	91
102-51*	Date of the last report	About This Report	91
102-52*	Reporting cycle	About This Report	91
102-53*	Contact point for questions regarding this report	About This Report	91
102-54*	Claims of reporting in accordance with the GRI Standards	About This Report	91
102-55*	GRI Content Index	GRI Standards Index	92
102-56*	External assurance	Statement of Third-party Assurance	97

\* Core options

GRI 300: Environmental Series				
Series	Disclosed Item	Description	Corresponding Sections and Chapters	Page
GRI 301 Materials	301-1	Materials used by weight or volume	Energy from Waste (EfW)	48
	301-2	Renewable materials used	Circular and Low-carbon Economy	48
GRI 303 Water and Effluents 2018	303-3	Water withdrawal	Circular and Low-carbon Economy	48
	303-4	Water discharge	Circular and Low-carbon Economy	48
	303-5	Water consumption	Circular and Low-carbon Economy	48
GRI 307 Environmental Compliance	307-1	Violation of environmental laws	Penalties for environmental violations on ECOVE Solvent Recycling Corp. and BoReTech Co., Limited amounted to NT\$30,000 and NT\$10,000 respectively in 2019.	
GRI 308 Supplier Environmental Assessment	308-1	New suppliers screened by environmental criteria	Sustainable Supply Chain Management	35
	308-2	Negative environmental impacts in the supply chain and actions taken	Sustainable Supply Chain Management	35

GRI 200: Economic Series				
Series	Disclosed Item	Description	Corresponding Sections and Chapters	Page
GRI 201 Economic Performance	201-1	Direct economic value generated and distributed (EVG&D) on an accruals basis	Management Performance and Industry Outlook	30
	201-2	Financial implications and other risks and opportunities due to climate change	Energy from Waste (EfW)	44
	201-3	Defined benefit plan obligations and other retirement plans	Talent Composition and Compensations	61
GRI 202 Market Presence	202-1	Ratio of standard entry level wage by gender compared to local minimum wage	Talent Composition and Compensations	61
	202-2	Proportion of senior management hired from the local community	Talent Composition and Compensations	61
GRI 203 Indirect Economic Impacts	203-1	Development and impact of infrastructure investments and services supported	Participation in Public Infrastructure	57
	203-2	Significant indirect economic impacts	Social Prosperity	76
GRI 204 Procurement Practices	204-1	Proportion of spending on local suppliers	Sustainable Supply Chain Management	35
GRI 206 Anti-competitive Behavior	206-1	Legal actions of anti-competitive behavior, antitrust and monopoly practice	Compliance	26

## GRI 400: Social Series

Series	Disclosed Item	Description	Corresponding Sections and Chapters	Page
GRI 401 Employment	401-1	New employee hires and employee turnover	Talent Composition and Compensations	61
	401-2	Benefits for full-time employees	Human Rights Protection and Benefits	63
	401-3	Parental leave	Human Rights Protection and Benefits	63
GRI 403 2018 Occupational Health and Safety	403-1	Occupational Health and Safety Management System	Occupational Injury Prevention	70
	403-2	Hazards identification, risks evaluation, and incidents investigation	Occupational Injury Prevention	70
	403-3	Occupational health services	Occupational Injury Prevention	70
	403-4	Participation, consultation, and communication in Occupational Health and Safety	Occupational Injury Prevention	70
	403-5	Occupational Health and Safety training	Occupational Injury Prevention	70
	403-6	Work health facilitation	Occupational Injury Prevention	70
	403-7	Prevention measures for Occupational Health and Safety	Occupational Injury Prevention	70
	403-9	Occupational injuries	Occupational Injury Prevention	70
	403-10	Occupational disease	Occupational Injury Prevention	70
	GRI 404 Training and Education	404-1	Average hours of training per year per employee	Talent Development
404-2		Programs for upgrading employee skills and transition assistance programs	Talent Development	66
404-3		Percentage of employees receiving regular performance and career development reviews	Talent Composition and Compensations	61
GRI 405 Diversity and Equal Opportunity	405-1	Benefits for full-time employees	Talent Composition and Compensations	61
	405-2	Ratio of basic salary and remuneration of women to men	Talent Composition and Compensations	61
GRI 406 Non- discrimination	406-1	Incidents of discrimination and corrective actions taken	Human Rights Protection and Benefits	63
GRI 407 Freedom of Association and Collective Bargaining	407-1	Operational locations and suppliers which may face the risk of freedom of association and collective bargaining	Human Rights Protection and Benefits Sustainable Supply Chain Management	63 35
GRI 408 Child Labor	408-1	Major risks of using child labor at operational locations and by suppliers	Human Rights Protection and Benefits Sustainable Supply Chain Management	63 35
GRI 414 Supplier Social Assessment	414-1	New suppliers that were screened using social criteria	Sustainable Supply Chain Management	35
	414-2	Negative social impact and actions taken in supply chain	Sustainable Supply Chain Management	35
GRI 415 Public Policy	415-1	Political contributions	The Company takes a neutral political stance and does not engage in political donations	-
GRI 417 Marketing and Labeling	417-2	Incidents of non-compliance concerning product and service information and labeling	No such events occurred in 2019	-
GRI 418 Customer Privacy	418-1	Substantiated complaints regarding concerning breaches of customer privacy and losses of customer data	Risk Management	28
GRI 419 Socioeconomic Compliance	419-1	Violation of laws and regulations in the social and economic fields	Workplace Disaster Prevention	70

\* Except for GRI 303 and 403 series that adopt the 2018 version, the above provisions adopt the 2016 version.



# Statement of Third-party Assurance



## ASSURANCE STATEMENT

### SGS TAIWAN LTD.'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE ECOVE Environment Corporation's CORPORATE SOCIAL RESPONSIBILITY REPORT FOR 2019

#### NATURE AND SCOPE OF THE ASSURANCE/VERIFICATION

SGS Taiwan Ltd. (hereinafter referred to as SGS) was commissioned by ECOVE Environment Corporation (hereinafter referred to as ECOVE) to conduct an independent assurance of the Corporate Social Responsibility Report for 2019 (hereinafter referred to as CSR Report). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the sampled text, and data in accompanying tables, contained in the report presented during on-site verification. SGS reserves the right to update the assurance statement from time to time depending on the level of report content discrepancy of the published version from the agreed standards requirements.

The information in the ECOVE's CSR Report of 2019 and its presentation are the responsibility of the management of ECOVE. SGS has not been involved in the preparation of any of the material included in ECOVE's CSR Report of 2019.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all ECOVE's stakeholders.

The SGS protocols are based upon internationally recognized guidance, including the Principles contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) 101: Foundation 2016 for accuracy and reliability and the guidance on levels of assurance contained within the AA1000 series of standards and guidance for Assurance Providers.

This report has been assured using our protocols for:

- evaluation of content veracity at a high level of scrutiny for ECOVE and moderate level of scrutiny for subsidiaries, joint ventures, and applicable aspect boundaries outside of the organization covered by this report;
- AA1000 Assurance Standard (2008) Type 2 evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2008); and
- evaluation of the report against the requirements of Global Reporting Initiative Sustainability Reporting Standards (100, 200, 300 and 400 series) claimed in the GRI content index as material and in accordance with.

The assurance comprised a combination of pre-assurance research, interviews with relevant employees, superintendents, CSR committee members and the senior management in Taiwan; documentation and record review and validation with external bodies and/or stakeholders where relevant. Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

#### STATEMENT OF INDEPENDENCE AND COMPETENCE

The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirm our independence from ECOVE, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

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The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors registered with ISO 26000, ISO 20121, ISO 50001, SA8000, RBA, QMS, EMS, SMS, GPMS, CFP, WFP, GHG Verification and GHG Validation Lead Auditors and experience on the SRA Assurance service provisions.

#### VERIFICATION/ ASSURANCE OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within ECOVE's CSR Report of 2019 verified is accurate, reliable and provides a fair and balanced representation of ECOVE sustainability activities in 01/01/2019 to 12/31/2019.

The assurance team is of the opinion that the Report can be used by the Reporting Organisation's Stakeholders. We believe that the organisation has chosen an appropriate level of assurance for this stage in their reporting. In our opinion, the contents of the report meet the requirements of GRI Standards in accordance with Core Option and AA1000 Assurance Standard (2008) Type 2, High level assurance.

#### AA1000 ACCOUNTABILITY PRINCIPLES (2008) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

##### Inclusivity

ECOVE has demonstrated a good commitment to stakeholder inclusivity and stakeholder engagement. A variety of engagement efforts such as survey and communication to employees, customers, investors, suppliers, CSR experts, and other stakeholders are implemented to underpin the organization's understanding of stakeholder concerns. For future reporting, ECOVE may proactively consider having more direct two-ways involvement of stakeholders during future engagement.

##### Materiality

ECOVE has established effective processes for determining issues that are material to the business. Formal review has identified stakeholders and those issues that are material to each group and the report addresses these at an appropriate level to reflect their importance and priority to these stakeholders.

##### Responsiveness

The report includes coverage given to stakeholder engagement and channels for stakeholder feedback.

#### GLOBAL REPORTING INITIATIVE REPORTING STANDARDS CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

The report, ECOVE's CSR Report of 2019, is adequately in line with the GRI Standards in accordance with Core Option. The material topics and their boundaries within and outside of the organization are properly defined in accordance with GRI's Reporting Principles for Defining Report Content. Disclosures of identified material topics and boundaries, and stakeholder engagement, GRI 102-40 to GRI 102-47, are correctly located in content index and report. For future reporting, it is recommended to further engage sound investigation by people with recognized expertise, or by expert bodies with recognized credentials for getting reasonably estimable economic, environmental, and/or social impacts.

Signed:

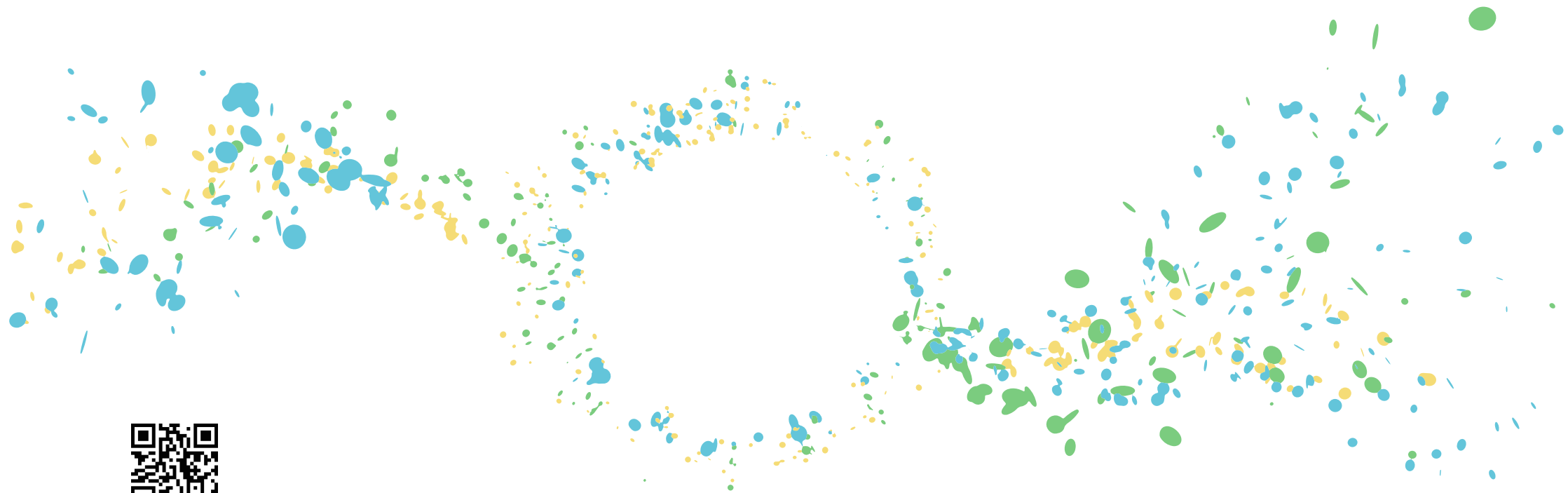
For and on behalf of SGS Taiwan Ltd.

David Huang  
Senior Director  
Taipei, Taiwan  
30 April, 2020  
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