Annual water recycled over the past years

United Renewable Energy has optimized the machine's water consumption by adapting its production capacity and designed the lowest water consumption model.

The following two main management guidelines have been established for water saving measures based on environmental considerations and evaluations:

- Process water reduction: Optimized process water evaluation and reuse of process recycled water
- Water recycling and reuse: Rainwater, cooling water and local scrubber drainage recycling and reuse

Among them, as the Hsinchu Science and Industrial Park plant ceased production of the cell process in 2022, the proportion of water recycled and improved in 2022 compared to 2021 was lower. The following table summarizes the water saving benefits of each major plant in the past three years:

Unit: million liters

		2020	2021	2022
Hsinchu Science and Industrial Park Plant	Total water consumption	130.02	66.85	43.48
	Recycle and reuse	111.30	10.17	0.07
	Water saving improvement percentage	85.6%	15.2%	0.1%
Zhunan Plant	Total water consumption	331.21	405.16	293.03
	Recycle and reuse	111.46	150.18	132.81
	Water saving improvement percentage	33.7%	37.1%	45.3%
Tainan Plant	Total water consumption	494.80	395.99	357.41
	Recycle and reuse	134.00	172.22	136.85
	Water saving improvement percentage	27.1%	43.5%	38.3%

Note 1: The formula for calculating recycle and reuse is: the amount of water recycled / the number of days in the month.

Note 2: The data source is based on the meter reading data of each plant equipment flow.

Water saving measures over the years

United Renewable Energy has implemented a number of wastewater recycling system improvements, including: the use of pure water and recycled water system resin regeneration fast and slow wash water recycling, pure water system sand filter tower and activated carbon tower forward and reverse wash water recycling, rooftop rainwater recycling system and Fan coil unit cooling water recycling; process water saving improvements focused on adjusting the machine Taiwater parameters, process machine water reduction, plant annual maintenance water saving control, plant watering, water saving by cutting water supply by half, pure water system RO drainage recycling to the filter tank, wet process wastewater recycling, cleaning of machine filter board after mud dewatering, additional process wet cleaning tower recycling system, improved water recycling of wet process. In 2022, we saved water and reduced water supply through measures such as recycling system of process machine drainage, shutting down watering at the plant and replacing it with manual unscheduled watering, and replacing the wet washing tower of the process machine with a dry machine, with an annual water saving performance of approximately 30.81 million liters. The accumulated water saving performance of each plant from 2013 to 2022 was approximately 568.37 million liters.

7.4 Pollution prevention and control

Under the ISO 14001 management system and PDCA continuous improvement concept, United Renewable Energy's pollution prevention begins at the source and actively invests in reducing the consumption of raw materials and natural resources in order to reduce the use of pollutants. We continue to manage air pollution emissions, reduce effluent discharges, and reduce waste disposal, with the aim of balancing production and environmental protection.

7.4.1 Air pollution prevention and controlGRI 305-6, 305-7

The air pollutants that were discharged into the system after reduction and improvement from the process source are treated by high performance prevention equipment, and the emissions from each of our plants are in compliance with the regulations. No ozone-depleting substances (ODS) were generated (spread) during the manufacturing process.

Gas Treatment System

Acid and alkali exhaust gas were processed by the exhaust gas treatment equipment (local scrubber) first according to the characteristics of the process exhaust gas, after which trace amounts of inorganic acid and alkali exhaust gas were discharged to the central exhaust gas scrubber for proper treatment before being released. The organic waste gas was pretreated by the system of condenser and oxidizer from the exhaust port at the machine end, and then emitted to the atmosphere after adsorption by activated carbon. The acid, alkaline, organic and hot exhaust systems of each plant are all designed with N+1 logic for backup operation, and the exhaust systems are all connected to emergency power supply and operate without fail in case of emergency, to ensure stable operation of the exhaust system, emission standards and smooth production operation.

Continuous monitoring

All systems are connected to the monitoring system, and the 24-hour shift staff is in control of the real-time operation status. When the operating parameters drift, an alarm is sent out for immediate action to ensure the quality of the emitted air.

Air pollution inspection

United Renewable Energy's emissions from production processes are treated before they are released to the atmosphere. 2022 air quality at the emission ports were tested by the competent authorities from time to time and met the requirements, and we also regularly collect samples for monitoring and analysis on our own, in order to strictly control the emissions. Since SOx and NOx are not included in the operating permit for fixed sources, regular monitoring is not required. At the same time, in response to the requirements of local competent authorities, there are certain regulations on the frequency of air pollutant inspection items, which are indeed implemented by each plant. The results of air pollutant emission inspection at each plant are summarized as follows:

Air pollutant emission inspection results of each plant

Hsinchu Science and Industrial Park plant

Air pollutant inspection item: non-methane total hydrocarbons (Kg/hr)						
Chimney		Inspection Method	2020	2021	2022	Emission Standard
P002	Entrance	NIEA A723.75B	-	-	38	-
	Exit		-	-	19	0.6
P003	Entrance		-	-	10	-
	Exit		-	-	5	0.6
P006	Entrance		-	-	24	-
	Exit		-	-	5	0.6

*P002~P006 are the emission pipes of activated carbon treatment equipment, which should be inspected once before extension. *(Choose 1 out of 3 for operation)

Zhunan plant

Air pollutant inspection item: non-methane total hydrocarbons (Kg/hr)						
Chimney		Inspection Method	2020	2021	2022	Emission Standard
P201	Entrance	NIEA A723.75B	-	-	-	-
	Exit		-	-	-	-
P202	Entrance		-	-	-	-
	Exit		-	-	-	-
P203	Entrance		-	-	0.22	-
	Exit		-	-	0.15	0.6
P204	Entrance		-	-	0.2	-
	Exit		-	-	0.15	0.6

*P201~P204 are the emission pipes of the activated carbon treatment equipment, and need to be inspected once a year.

*(Choose 2 out of 4 for operation)

Air pollutant inspection item: non-methane total hydrocarbons (Kg/hr)						
Chimney	Inspection Item	Inspection Method	2020	2021	2022	Emission Standard
P101	Particulate pollutants	NIEA A101.77C	-	-	-	-
	Ammonia (g/s)	NIEA A408.72B	-	-	-	-
	Hydrofluoric acid(Kg/hr)	A452.73B	-	-	-	-
	Hydrochloric acid(Kg/hr)		-	-	-	-
	Nitric acid(Kg/hr)		-	-	-	-
	Phosphoric acid(Kg/hr)		-	-	-	-
P102	Particulate pollutants	NIEA A101.77C	-	-	-	-
	Ammonia (g/s)	NIEA A408.72B	-	-	-	-
	Hydrofluoric acid(Kg/hr)	A452.73B	-	-	-	-
	Hydrochloric acid(Kg/hr)		-	-	-	-
	Nitric acid(Kg/hr)		-	-	-	-
	Phosphoric acid(Kg/hr)		-	-	-	-
P103	Particulate pollutants	NIEA A101.77C	-	-	$2.81*10^{-2}$	100
	Ammonia (g/s)	NIEA A408.72B	-	-	$3.68*10^{-2}$	1.215
	Hydrofluoric acid(Kg/hr)	A452.73B	-	-	$5.15*10^{-3}$	0.6
	Hydrochloric acid(Kg/hr)		-	-	$1.77*10^{-3}$	0.6
	Nitric acid(Kg/hr)		-	-	$6.03*10^{-3}$	0.6
	Phosphoric acid(Kg/hr)		-	-	$3.46*10^{-4}$	0.031

Air pollutant inspection item: non-methane total hydrocarbons (Kg/hr)						
Chimney	Inspection Item	Inspection Method	2020	2021	2022	Emission Standard
P104	Particulate pollutants	NIEA A101.77C	-	-	$2.59*10^{-2}$	100
	Ammonia (g/s)	NIEA A408.72B	-	-	$9.70*10^{-3}$	1.215
	Hydrofluoric acid(Kg/hr)	A452.73B	-	-	$1.06*10^{-3}$	0.6
	Hydrochloric acid(Kg/hr)		-	-	$1.47*10^{-3}$	0.6
	Nitric acid(Kg/hr)		-	-	$1.13*10^{-2}$	0.6
	Phosphoric acid(Kg/hr)		-	-	$2.09*10^{-4}$	0.031
P105	Particulate pollutants	NIEA A101.77C	-	-	$2.83*10^{-2}$	100
	Ammonia (g/s)	NIEA A408.72B	-	-	$1.88*10^{-2}$	1.215
	Hydrofluoric acid(Kg/hr)	A452.73B	-	-	$2.44*10^{-3}$	0.6
	Hydrochloric acid(Kg/hr)		-	-	$5.35*10^{-3}$	0.6
	Nitric acid(Kg/hr)		-	-	$2.00*10^{-2}$	0.6
	Phosphoric acid(Kg/hr)		-	-	$4.16*10^{-4}$	0.031

*P101~P105 are the emission pipes of acid-alkali treatment equipment, which can be checked before the extension of the operation permit.

*(Choose 3 out of 5 for operation)

Tainan plant

Air pollutant inspection item: non-methane total hydrocarbons (Kg/hr)						
Chimney		Inspection Method	2020	2021	2022	Emission Standard
P201	Entrance	NIEA A723.75B	0.31	0.16	-	-
	Exit		0.03	0.04	-	0.6
P202	Entrance		0.12	0.09	0.10	-
	Exit		0.05	0.03	0.04	0.6
P203	Entrance		0.20	0.09	0.07	-
	Exit		0.03	0.03	0.02	0.6
P204	Entrance		0.13	0.05	0.05	-
	Exit		0.04	0.02	0.02	0.6
P205	Entrance		0.10	0.09	-	-
	Exit		0.03	0.04	-	0.6
P206	Entrance		0.09	0.09	0.11	-
	Exit		0.03	0.03	0.02	0.6
P301	Entrance		-	-	0.46	-
	Exit		-	-	0.11	-
P302	Entrance		-	-	0.39	-
	Exit		-	-	0.09	-

*P201~P302 are the emission pipes of activated carbon treatment equipment, and they need to be inspected once a year.

*P201 and P205 were cancelled in 2022, and P301 and P302 were added.

Air pollutant inspection item: non-methane total hydrocarbons (Kg/hr)						
Chimney	Inspection Item	Inspection Method	2020	2021	2022	Emission Standard
P101	Odor pollutants	NIEA A201.14A	-	174	-	4,000
	Ammonia (g/s)	NIEA A408.72B	-	ND	-	2.6
	Hydrofluoric acid(Kg/hr)	A452.73B	-	$1.95*10^{-3}$	-	0.6
	Hydrochloric acid(Kg/hr)		-	$2.13*10^{-3}$	-	0.6
	Nitric acid(Kg/hr)		-	$1.45*10^{-2}$	-	0.6
	Sulfuric acid(Kg/hr)		-	$1.08*10^{-3}$	-	0.1
	Phosphoric acid(Kg/hr)		-	$9.74*10^{-5}$	-	0.6
P102	Odor pollutants	NIEA A201.14A	-	1,740	-	4,000
	Ammonia (g/s)	NIEA A408.72B	-	ND	-	2.6
	Hydrofluoric acid(Kg/hr)	A452.73B	-	$4.56*10^{-3}$	-	0.6
	Hydrochloric acid(Kg/hr)		-	$3.57*10^{-3}$	-	0.6
	Nitric acid(Kg/hr)		-	$1.39*10^{-2}$	-	0.6
	Sulfuric acid(Kg/hr)		-	$2.87*10^{-3}$	-	0.1
	Phosphoric acid(Kg/hr)		-	$<1.61*10^{-4}$	-	0.6
P103	Odor pollutants	NIEA A201.14A	-	309	-	4,000
	Ammonia (g/s)	NIEA A408.72B	-	ND	-	2.6
	Hydrofluoric acid(Kg/hr)	A452.73B	-	$1.08*10^{-2}$	-	0.6
	Hydrochloric acid(Kg/hr)		-	$4.46*10^{-3}$	-	0.6
	Nitric acid(Kg/hr)		-	$1.72*10^{-2}$	-	0.6
	Sulfuric acid(Kg/hr)		-	$1.48*10^{-3}$	-	0.1
	Phosphoric acid(Kg/hr)		-	$<1.20*10^{-4}$	-	0.6
P104	Odor pollutants	NIEA A201.14A	-	174	-	4,000
	Ammonia (g/s)	NIEA A408.72B	-	ND	-	2.6
	Hydrofluoric acid(Kg/hr)	A452.73B	-	$8.35*10^{-4}$	-	0.6
	Hydrochloric acid(Kg/hr)		-	$1.80*10^{-3}$	-	0.6
	Nitric acid(Kg/hr)		-	$1.43*10^{-3}$	-	0.6
	Sulfuric acid(Kg/hr)		-	$4.27*10^{-4}$	-	0.1
	Phosphoric acid(Kg/hr)		-	$<6.01*10^{-5}$	-	0.6
P105	Odor pollutants	NIEA A201.14A	-	309	-	4,000
	Ammonia (g/s)	NIEA A408.72B	-	$5*10^{-3}$	-	2.6
	Hydrofluoric acid(Kg/hr)	A452.73B	-	$2.59*10^{-3}$	-	0.6
	Hydrochloric acid(Kg/hr)		-	$3.97*10^{-3}$	-	0.6
	Nitric acid(Kg/hr)		-	$1.13*10^{-2}$	-	0.6
	Sulfuric acid(Kg/hr)		-	$1.07*10^{-3}$	-	0.1
	Phosphoric acid(Kg/hr)		-	$<1.45*10^{-4}$	-	0.6

*P101~P105 are the emission pipes of the acid-alkali treatment equipment, which could be inspected before the renewal of the operation permit (2021).

7.4.2 Water Pollution Prevention and Control GRI 303-2, 303-4

United Renewable Energy's water pollution prevention and control system at each plant is operated in accordance with SOPs and maintenance procedures. The discharging terminal is equipped with an on-line monitoring system, so that in case of abnormal conditions, in addition to controlling the backflow control by the system, the operators can also immediately activate the emergency response process to halt the discharge to prevent environmental pollution before it happens.

■ Ammonia Nitrogen Wastewater Treatment System

Due to the process requirements of solar cells, nitric acid is used in the etching process and ammonia is used in the thin film process, and the waste acid after these two processes is part of the wastewater to be treated. United Renewable Energy has been properly diverting the wastewater, and the nitrate nitrogen in the wastewater has been treated to meet the standards for industrial areas. The ammonia used in the film process has been washed with water, and the ammonia nitrogen biological treatment system has been invested to fully utilize the benefits of the treatment, resulting in the treatment of ammonia nitrogen wastewater that meets the standards of the wastewater treatment units in each plant.

■ Water quality inspection of wastewater discharge

The wastewater from United Renewable Energy's production process is pre-treated to meet the required standards before it is discharged to the Science Park or industrial area wastewater plants. In order to monitor the water quality of the effluent in real time, a continuous water quality and volume monitoring system has been installed before discharge to ensure that the regulated wastewater meets the standards. In 2022, the competent authorities conducted random water quality inspections at the discharge ports from time to time, all of which were in compliance with the regulations, and also regularly outsourced the collection of samples for monitoring and analysis, in order to strictly control the discharge of wastewater. The water volume and water quality monitoring results of each plant are summarized as follows:

Unit: million liters

Plant	2020	2021	2022	Waste Water Processing Unit
Hsinchu Science and Industrial Park plant	80.49	27.05	11.39	Hsinchu Science Park Bureau Wastewater Treatment Plant
Zhunan plant	157.56	183.17	225.22	Zhunan Science Park Bureau Wastewater Treatment Plant
Tainan plant	288.64	317.03	285.93	Tainan Technology Industrial Park Service Center Wastewater Treatment Plant

Note 1: The wastewater discharge is calculated according to the wastewater meter of each plant.

● Water quality monitoring results for each plant area

The waste water from United Renewable Energy's manufacturing process is regularly monitored and analyzed by outsourced sampling. The following table shows the inspection items and analysis results for the past three years, of which the inspection data for 2022 was collected and analyzed in the second half of the year.

Hsinchu Science and Industrial Park plant					
Inspection Item	Environmental Protection Administration Inspection Standards	2020	2021	2022	Regulated Standards
pH	NIEA-W424.52A	8	7.15	8.1	5-9
Temperature(°C)	NIEA-W217.51A	22.0	24.2	25.7	35
SS(mg/L)	NIEA-W210.58A	23.5	80.64	16.5	300
COD(mg/L)	NIEA-W517.52B	85.6	83.8	21.9	500
Fluoride(mg/L)	NIEA-W413.52A	1.44	4.6	0.4	15

Zhunan plant					
Inspection Item	Environmental Protection Administration Inspection Standards	2020	2021	2022	Regulated Standards
pH	NIEA-W424.52A	7.4	7.9	8	5~9
Temperature°C)	NIEA-W217.51A	23.1	24.0	24.5	<35°C
SS(mg/L)	NIEA-W210.58A	20.3	24.8	5	<300
COD(mg/L)	NIEA-W517.52B	26.3	11.5	9.8	<500
Fluoride(mg/L)	NIEA-W413.52A	1.36	4.46	2.26	<15

Tainan plant					
Inspection Item	Environmental Protection Administration Inspection Standards	2020	2021	2022	Regulated Standards
pH	NIEA-W424.52A	7.1	6.7	7.8	5-9
Temperature(°C)	NIEA-W217.51A	30.6	28.9	28.3	<42
SS(mg/L)	NIEA-W210.58A	6.4	34.9	11.1	320
COD(mg/L)	NIEA-W517.52B	5.3	25.2	50.8	520
Fluoride(mg/L)	NIEA-W413.52A	1.79	9.8	1.85	15

7.4.3 Waste Management GRI 306-1 ~ 306-5

United Renewable Energy's waste management is based on compliance with laws and regulations. In addition to source reduction, United Renewable Energy also promotes recycling to increase the proportion of recycled waste.

Waste Source Management

Waste is generally divided into two major categories: employee household waste and process waste:

- Employee waste management: Through employee education and training and poster promotion, we promote waste reduction and sorting management so that recyclable resources can be recycled and reused.
- Process waste management: Continue to reduce the amount of hazardous waste generated and improve reuse efforts

Effectiveness of waste management

United Renewable Energy has established a waste management policy that requires separate storage, labeling, and no mixing with other miscellaneous items according to the nature of the waste, a written contract to be completed prior to disposal, a legal organization to clean up the waste, and regular audits by the cleanup service provider. In accordance with regulatory compliance and reduced cleanup costs, United Renewable Energy's waste management principles prioritize reuse of resources to achieve maximum environmental benefits through effective reuse of resources. United Renewable Energy's general and hazardous waste recycling rates have reached over 85% for the past three years, and in 2022, capacity increased by 11.3% and waste increased by 10.3% compared to the previous year.

The waste generation and disposal for the last three years are summarized as follows

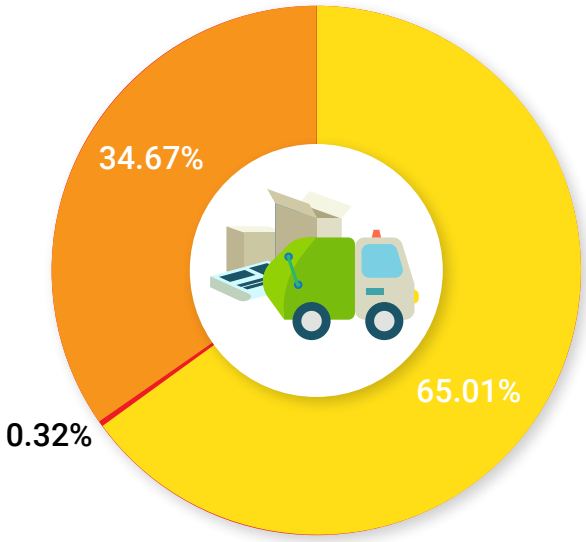
Total amount of waste at each plant

Unit: ton

Year		2020	2021	2022
Total waste		3,597.8	3,413.5	3,766.4
Hazardous business waste	Reuse	1,558.0	1,667.2	1,256.3
	Buried	0	0	0
	Incinerated	2.3	0	0.8
	Other	0.2	161.0	95.4
Total		1,560.5	1,828.2	1,352.4
General business waste	Reuse	1,737.9	1,371.3	2,202.1
	Buried	0	6.9	3.0
	Incinerated	154.7	142.3	155.4
	Other	144.6	64.8	53.5
Total		2,037.2	1,585.3	2,414.0

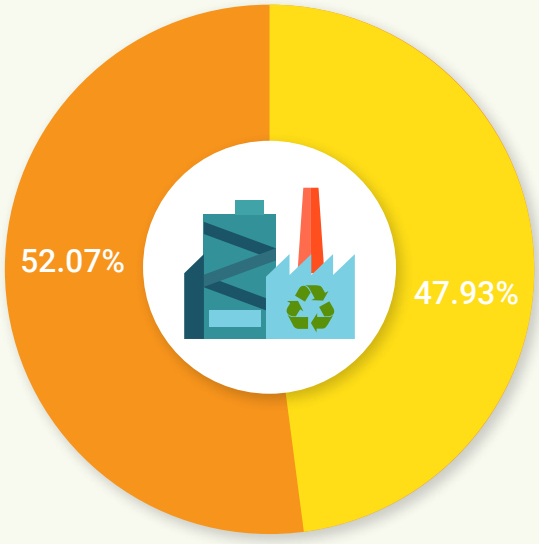
*Other disposal methods include non-reuse, burial, and incineration.

Categories for reuse of waste in each plant



General Business Waste Reuse Category

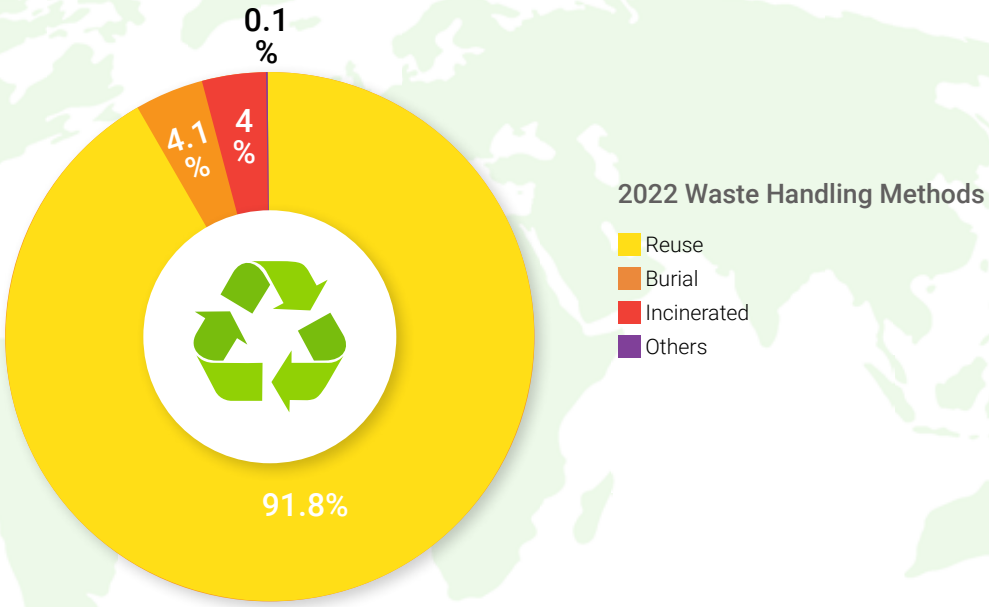
- Use of waste as recycled raw materials
- Use of waste as recycled materials and additives
- For other reuse purposes

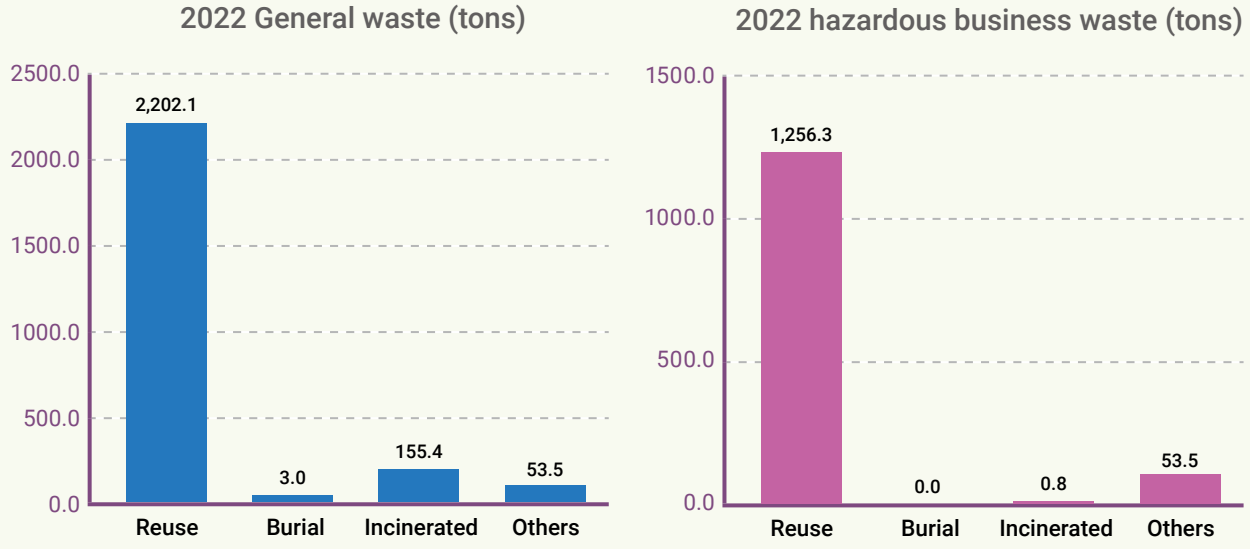


Hazardous Business Waste Reuse Category

- Use of waste as recycled raw materials
- Use of waste as recycled materials and additives

The ratio of waste type and handling method in Taiwan plants





7.5 Greenhouse Gas Management

The solar industry was born out of greenhouse gas emissions and global warming. To mitigate the impact of climate change on the environment, United Renewable Energy produced 1.420 GW of solar cells in Taiwan in 2022, which generated 2.073 billion kWh of electricity based on an average of four hours of effective sunlight per day (1,000W/M2), and suppressed 1,055,184 tons of CO2 emissions for the Earth, which is equivalent to the carbon absorption capacity of 2,713 Daan Parks in one year.

7.5.1 Greenhouse Gas Inventory GRI 305-1~4

United Renewable Energy conducts an annual inventory of greenhouse gas emissions from each plant on its own, in order to grasp the current situation and set targets for reduction effectiveness. The continuous implementation of the inventory reveals the determination of green energy companies. According to the ISO 14064-1 standard, through the greenhouse gas inventory process and results, we are able to grasp the greenhouse gas emissions, and we hope that we can devote ourselves to greenhouse gas reduction in the future, so that we can fulfill our responsibility as a member of the earth village to reduce the trend of global warming. This report compiles the greenhouse gas emission equivalents for the past three years as follows:

Year			2020	2021	2022
Scope 1	Type 1	Emission	283	317	2,077.3673
Scope 2	Type 2	Emission	68,399	65,230	62,240.3972
Scope 3	Type 3	Emission	-	-	949.6286
	Type 4	Emission	-	-	10,859.5473
	Type 5	Emission	-	-	-
	Type 5	Emission	-	-	-
Bio Energy			0	0	0
Total emissions (metric tons CO_2e/year)			68,682	65,547	76,126.940
Intensity (metric tons CO_2e/MW)			58.3	51.4	45.3

Note 1: Emission unit: metric tons of CO_2e/year; Intensity calculation: company-wide GHG emissions (type 1 + type 2) / production capacity (MW)

Note 2: Scope 1: Direct emissions from the process or facility, and the gas type calculated is carbon dioxide.

Scope 2: purchased electricity. The energy source of heat or steam, the gas type calculated is carbon dioxide.

Scope 3: Other indirect emissions, such as employee commuting, business travel, goods _ input power ..., the gas type calculated is carbon dioxide.

Note 3: In 2020 and 2021, the GHG inventory covered only Scope 1 and Scope 2. In 2022, due to the identification of "significant indirect GHG emissions", the staff commuting (Type 3), business travel (Type 3), goods_input electricity (Type 4), services_waste disposal (Type 4) in Scope 3 were included in the calculation.

Note 4: The organizational boundary of the inventory covered the Taipei office, Hsinchu plant, Hsinchu Science and Industrial Park plant, Zhunan plant and Tainan plant. (The Hsinchu plant was closed in 2021, and the inventory data of the Taipei office were added in 2022)

Note 5: For 2020 and 2021 data, according to the Environmental Protection Administration 14064 declaration changed to the operation control method, the calculation of the Environmental Protection Administration greenhouse gas inventory table version 3.0.0 adopted Emission coefficient method, emission coefficient refers to the greenhouse gas emission coefficient management table 6.0.3 version of our Environmental Protection Administration announcement; GWP value is mainly calculated using the IPCC's fourth evaluation report in 2007.

Note 6: For 2022 data, according to the Environmental Protection Administration 14064 declaration changed to the operation control method, the calculation of the greenhouse gas inventory table of the Environmental Protection Administration 3.0.0 version adopted method using emission coefficients. Emission coefficients refer to our country Environmental Protection Administration announcement of greenhouse gas emission coefficient management table 6.0.4 version; GWP value is mainly calculated by the IPCC 2021 sixth evaluation report.

Note 7: The data for 2020~2021 were not verified by a third party, and the data for 2022 were verified by a third party.

Note 8: The higher figure in 2022 compared to the previous two years is mainly due to the inclusion of process gas (laughing gas N_2O) in the calculation in 2022.

7.5.2 Climate Change Governance

The increasing frequency of extreme weather in recent years indicates that the crisis brought about by global warming is imminent. Governments around the world are paying more and more attention to the issue of climate change and are urging companies to incorporate the issue of climate change into the management of their operations through the amendment of regional regulations in each country. In addition to identifying the operational risks brought about by climate change, the Company has incorporated the climate related Task Force on Climate-Related Financial Disclosures (TCFD) issued by the Financial Stability Board (FSB) into its operational management. We have included the core items of "Governance," "Strategy," "Risk Management," and "Indicators and Targets" in our operational management and have disclosed our governance performance in our sustainability report. We hope that stakeholders will understand the impact of climate change-related risks and opportunities, and the related response measures.

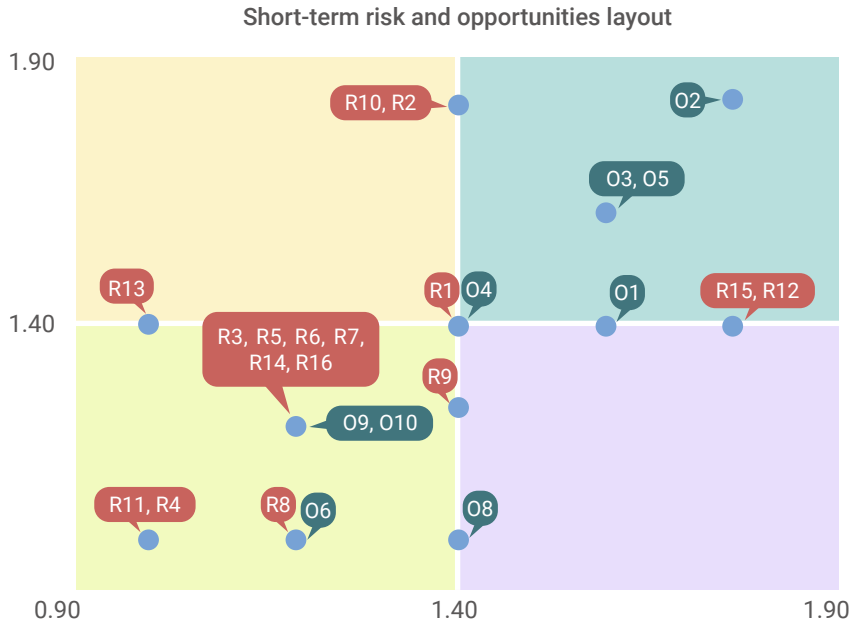
-Govermance

Regarding the discussion and management of climate change, the ESG Committee conducts discussions and evaluations, and resolutions related to climate change are approved by the Board of Directors. A task force is set up under the committee, and the Sustainability Technology Team coordinates and integrates each task force to report annually to the Board of Directors on TCFD's climate governance response for reference in decision-making.

-Strategies

In response to the climate related risks and opportunities that affect the Company's strategy and financial planning, the Company uses quantitative and qualitative climate related scenario analysis with reference to TCFD's climate related scenario analysis in order to adopt a response strategy. The 2℃ scenario was discussed in the ESG Committee meeting and the tools provided by TCCIP (Taiwan Climate Change Projection Information and Adaptation Knowledge Platform) were used as a reference for the evaluation of the physical risk scenario of climate change. The 2℃ / RCP2.6 scenario was eventually adopted as our climate change physical risk scenario, in which we describe the topics of climate change risks and opportunities in terms of physical risks and regulatory transition risks. The final identification of climate risks and opportunities related to the Company's scope of operations is based on the TCFD report on the manufacturing industry: a decade is used to consider the long-term operational development of the Company, which is defined as short-term for 1-3 years, medium-term for 3-5 years, and long-term for 6-10 years.

● The Company's 2022 TCFD Climate Risk and Opportunity Matri



Note 1: 1-3 years for short-term, 3-5 years for mid-term, and 6-10 years for long-term

Note 2: The red color on the matrix indicates risk issues and the green color indicates opportunity issues.

Number	Climate Change Risk Issues	Risk Level	Time Scope	Number	Climate Change Risk Issues	Risk Level	Time Scope
R1	Increase in greenhouse gas emissions pricing	Mid	long-term	R9	Uncertain market information	Mid	long-term
R2	Strengthen emission reporting obligations	High	short-term mid-term long-term	R10	Increase in raw material costs	High	short-term mid-term long-term
R3	Requirements and supervision of existing products and services	Low	long-term	R11	Changes in Consumer Preferences - Industry Stigmatization	Low	long-term
R4	Exposure to litigation risk	Low	-	R12	Increasing Stakeholder Concerns and Negative Feedback	High	short-term long-term
R5	Replace existing products and services with low-carbon products	Low	-	R13	Severity of extreme weather events such as typhoons and floods increases	Low	-
R6	Failure of investment in new technologies	Low	-	R14	Changes in rainfall (water) patterns and extreme changes in climate patterns	Low	-
R7	The Cost of Low Carbon Technology Transition	Low	-	R15	Increase in average temperature	High	short-term long-term
R8	Changes in customer behavior	Low	long-term	R16	Rising sea levels	Low	long-term
O1	Adopting more efficient transportation methods	Mid	mid-term long-term	O6	Use of low carbon energy	Low	long-term
O2	Use more efficient production and distribution processes	High	short-term long-term	O7	Adopt rewarding policies	Low	long-term
O3	Recycle and reuse	High	short-term long-term	O8	Use of new technologies	Low	long-term
O4	Switch to a more efficient building	Mid	long-term	O9	Participate in the carbon trading market	Low	mid-term long-term
O5	Reduce water usage and consumption	High	short-term long-term	O10	Switching to non-centralized energy	Low	mid-term long-term

Note 1: 1-3 years for short-term, 3-5 years for mid-term, and 6-10 years for long-term

Note 2: The red color on the matrix indicates risk issues and the green color indicates opportunity issues.

-Risk management

Through the ESG Committee's "TCFD Climate Change Related Financial Disclosure Discussion Meeting", the Company convenes relevant members to discuss and identify climate change risks and opportunities, which is guided by TCFD's proposed framework, and discusses and identifies transition risks (policies and regulations, technology, markets, reputation), physical risks (immediate risks, long-term risks) and opportunities (resource efficiency, energy sources, products/services, markets, resilience).

1. Transition risk - identified three significant risks, namely policy and regulatory risk, market risk and reputational risk

The Greenhouse Gas Reduction and Management Act will be changed to the Climate Change Response Act, which will impose a carbon fee on direct or indirect high-emitting products in 2024-2025 at the earliest, which will strengthen the company's obligation to report carbon emissions. As renewable energy is likely to be one of the voluntary emission reduction items, the increased demand for renewable energy from large carbon emitters is likely to lead to increased demand for solar products and higher costs. In recent years, solar energy products have been accused of polluting the environment and creating light hazards in Taiwan, which have delayed the construction of solar energy system

sites due to protests from environmental groups and nearby residents during the development process. These 3 aspects of risk may have a financial impact in terms of increased operating costs and lower demand for products, but at the current stage, the Company is not a high carbon emission industry, so the impact on overall operations is not significant. In addition to confirming that a comprehensive greenhouse gas inventory will be conducted in the near future, the Company will also conduct evaluations and set carbon reduction targets for the purchase of green power, the installation of solar energy-saving equipment, and the purchase of bioenergy. To address the risk of raw material cost increase, the Company will adopt effective supply chain management and diversified procurement to reduce the impact of raw material price fluctuation on the Company's operation. In response to stakeholders' concerns and the increasing risk of negative feedback on our reputation, we have developed a series of anti-reflective and detachable products to reduce the impact on the environment, and we have also proven through long-term experiments that solar energy products do not cause pollution to the environment. The Company will actively promote anti-reflective and detachable module products to further expand the business opportunities for these products.

2. Physical risk - 1 significant risk was identified, which is a long-term climate risk

The average climate rise poses many risks to the company, including natural disasters caused by climate change, energy and resource instability, etc. The company continues to conduct inventory of greenhouse gas emissions, reduce energy consumption, improve energy-consuming equipment and other measures.

3. Resource efficiency opportunities, identified 3 significant opportunities which are the use of more efficient production and distribution processes, recycling and reuse and reduction of water usage and consumption.

Considering the efficient use of resources, the Company expects to implement:

1.Promote composite transportation mode, plan the best transportation solution, reduce transportation cost and carbon emission.

2.Improve the efficiency of distribution process, customer loyalty, customer satisfaction, and make better performance forecast and report.

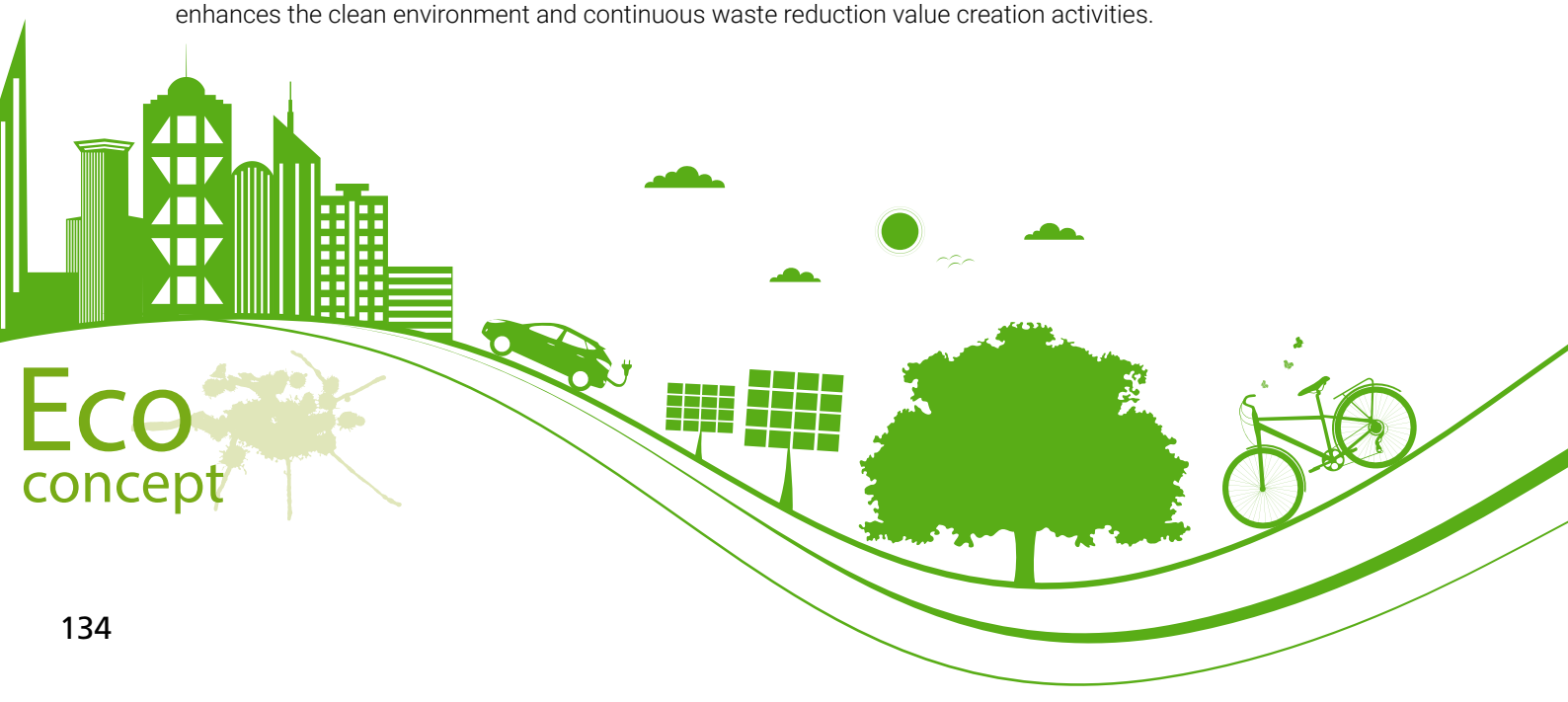
3. Optimize the water consumption of machines according to production capacity and design the lowest water consumption model.

4. Water saving measures are identified by environmental considerations and the following two main management guidelines are set:

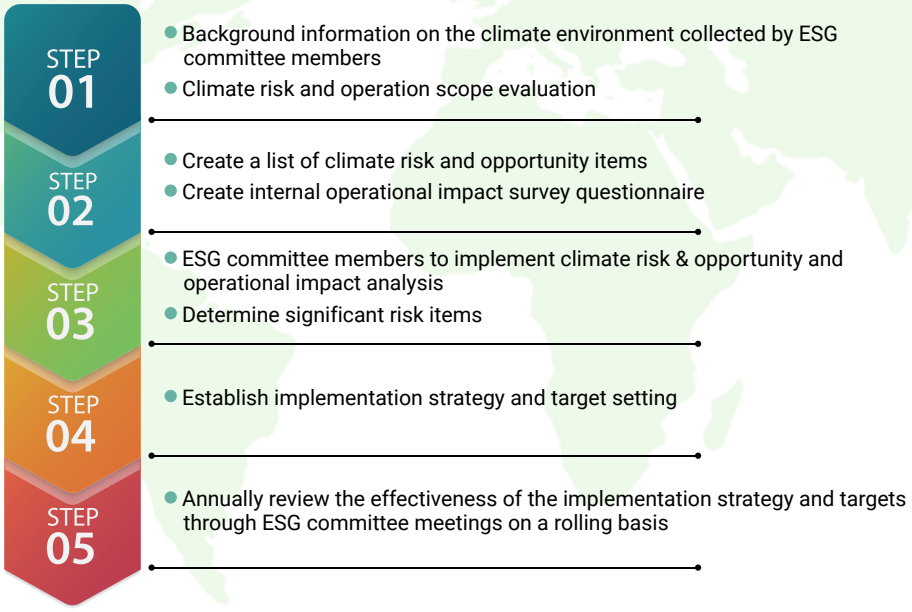
Process water consumption reduction: Optimize process water evaluation and reuse of process recycled water.

Water recycling and reuse: Rainwater and cooling water recycling and reuse

5. Reduce, Reuse, Recycle, and so on, to carry out recycling and reuse operations of packaging materials between internal plants. This not only saves considerable amount of packaging materials and cartons every year, but also enhances the clean environment and continuous waste reduction value creation activities.



TCFD Risk Management Process



Note: This process shows that the Company conducts tracking and control of climate change risks, collects data and determines the risk level according to the risk matrix, and the ESG Committee conducts overall analysis, evaluation and review, then sets up strategies and targets, and reviews them on a rolling basis from year to year for results achieved.

-Metrics & Targets (Metrics & Targets)

Based on the indicator items set by TCFD Climate Risk and Opportunity, we further set the following targets:

1. The average annual energy saving rate should reach 1% or more.

2. To implement greenhouse gas management in accordance with ISO 14064-1, and conduct annual verification to maintain the effectiveness and ensure the effective operation of the management mechanism.

3. To reduce carbon emissions by more than 1% per year.

2,046.5321 metric tons of CO_2e for Scope 1 (Type 1) emissions in 2022;

Scope 2 (Type 2) emissions of 62,240.3972 metric tons of CO_2e;

Scope 3 (Type 3+4) emissions 11,809.1759 metric tons of CO_2e