# Response to Climate Change

In recent years, the huge impact of the greenhouse effect as well as the frequency and severity of global extreme climates, have increased each year. Climate change has greatly impacted human society and ecosystems and become the most concerned issue for global companies and governments. As the United Nations Climate Change Conference COP27 ended, it pointed out that global climate action must be accelerated, or it will be difficult to control global warming within 1.5 degrees before 2030, which will turn into an irreversible climate disaster.

Clevo started implementing the Task Force on Climate-related Financial Disclosures Recommendation (TCFD) developed by the International Financial Stability Board in 2022 to address the potential impact that climate change has on the company and implement effective climate management strategies. The goal is to describe the climate risks and opportunities at Clevo according to the 4 frameworks of governance, strategy, risk management, indicators and goals. We aim to determine and assess the main climate risks and opportunities, create specialized management plans and objectives for the most pressing problems, and implement climate change mitigation strategies across the company's operations. We want all employees to understand and address the effects of climate change on Clevo throughout the operation management processes. CLEVO<sup>®</sup> 02 Response to Climate Change

## 2.1. Climate Governance

## 2.1.1 Board of Directors

Clevo's Board of Directors is the highest governance unit for managing issues related to climate change and is responsible for managing and supervising Clevo's climate risks and opportunities. The Sustainable Development team must report to the Board of Directors at least once a year on the company's climate risk management progress and the related-goal achievement. It also researches the company's key climate risks and opportunity trends over the last few years. It develops the company's overall climate risk opportunity response strategy as well as future target layout.

## 2.1.2 Sustainable Development Task Force

The company has established a dedicated unit for climate change and sustainable development for Clevo. The President serves as the convener. It is divided into 5 teams according to the nature of work: corporate governance team, employee care team, social welfare team, environment sustainability team, and customer care team. Each team comprises appropriate functional members chosen from the company's departments, and the team leader is the department head.

The Sustainable Development Task Force is responsible for communicating with various departments; identifying key climate risks and opportunities related to Clevo operations through interviews, peer benchmarking reports, and CDP questionnaires; and negotiating climate response strategies and goals with various departments to establish goals and management plans. The President convenes the Sustainable Development Task Force is convened regularly to hold meetings, gather the company's departments to determine the climate risk opportunity status and countermeasures, and report to the Board of Directors after the President's review. Each discussion meeting aims to establish goals and implement the climate strategy throughout Clevo's core operations.





# 2.2. Climate Change Response Strategies

In 2022, Clevo followed the TCFD guidelines, peer reports, and international trends to collect and identify the key annual issues of Clevo's climate risks and opportunities. The President convenes the Sustainable Development Task Force and uses the Sustainable Development Task Force to collect the actual climate issues faced by each unit. Each unit and department scores the impact and probability of climate issues. Finally, 5 key climate risks and opportunities for Clevo were determined to include 2 transition risks, 1 physical risk, and 2 climate opportunities. The 5 key issues are listed below in 2.2.2 Climate Risk and Opportunity Identification Results to showcase the occurrence schedule, Clevo's current status, and future response management measures.



## 2.2.1 Clevo's Climate Risk and Opportunity Identification Matrix

← Low Possibility Impact Possibility High Possibility →



# 2.2.2 Climate Risks and Opportunities, Identification Results, and Management Measures

Aspects	Issues	Impact Period	Current Status for Climate Change Risks and Opportunities	Response Strategies and Management Measures
Transformation Risks	Increased Pricing on Greenhouse Gas Emissions	Short-term (within 3 years)	Countries have successively promulgated product import carbon fees and carbon tax regulations in recent years as global climate actions lag. Clevo's products are sold in the Americas, Europe, and Asia. The United States and the European Union will also implement the Clean Competition Act (CCA) and the Carbon Border Adjustment Mechanism (CBAM) in 2024 and 2023, respectively. Taiwan will also impose a carbon fee on large carbon emitters in 2023. Although Clevo is not a high- energy-consuming industry, a high- carbon-intensive product, or the first wave of regulatory targets, it may still face carbon fee/tax risk as regulations tighten.	<ol> <li>Plan to invest in low-carbon product design and optimize and improve the energy efficiency of the production process.</li> <li>Suppliers must disclose carbon emission data and reduction plans by strengthening supply chain management.</li> <li>To track the carbon emissions and energy consumption trends, the factory has established a dedicated department and commissioner to take charge of the annual greenhouse gas inventory and energy management.</li> <li>Introduce ISO50001 energy management system and third- party certification such as green factory to ensure the company's energy management policy performance.</li> </ol>
Transformation Risks	Supervision of Existing Products and Service Requirements	Medium- term (3-10 years):	<ol> <li>Under climate change, consumers are increasingly paying attention to product energy efficiency and the impact of terminal waste on the environment. International standards for energy efficiency and substances prohibited or restricted in consumer electronics have also increased.</li> <li>All of Clevo's laptop computers on the market adhere to the most recent energy efficiency and environmental protection standards. While complying with various countries' environmental protection regulations, Clevo also works to comply with Windows 11's energy-saving settings. However, higher energy efficiency and restricted/hazardous substance requirements for consumer electronics products may increase in the future. Clevo may still need to invest more in R&amp;D costs to improve laptop energy efficiency or find alternatives to restricted raw materials.</li> </ol>	<ol> <li>The dedicated unit regularly reviews international energy efficiency regulations such as ENERGY STAR, 80 PLUS, and other norms. It also reports the changing trend internally so that the R&amp;D unit can adjust its focus based on regulatory and trend requirements.</li> <li>The supply chain must sign the Hazardous/Restricted Substance Commitment and honestly declare the prohibited and restricted substances in raw materials for Clevo to establish a raw material database.</li> </ol>

# Clevo ESG Report

Aspects	Issues	Impact Period	Current Status for Climate Change Risks and Opportunities	Response Strategies and Management Measures
Physical Risks	Increased Severity and Frequency of Extreme Climate Events	Medium- term (3-10 years):	<ol> <li>In recent years, China's average temperature and extreme rainfall have set new records, prompting local governments to announce power cuts and peak-staggered production policies in response to high temperatures and droughts, and resulted in local factories shutting down without warning.</li> <li>Although Clevo's Kunshan factory in China uses only domestic and no processed water, short-term droughts have little impact on the company. However, in October 2021 as well as August and September 2022, the Kunshan factory experienced staggered power consumption and power cuts due to high temperatures. Although it did not directly cause the factory to shut down, the factory running. These factors also raise reserve diesel prices and increase annual carbon emissions.</li> </ol>	<ol> <li>The company has compiled the "Special Emergency Plan for Extreme Weather incidents" and conducts targeted drills yearly to reduce financial losses caused by extreme weather.</li> <li>The company will comply with the government holidays if the government issues a red warning for extreme weather (such as strong typhoons, floods, or heavy snowstorms).</li> <li>The company's factory building is designed to be raised 1 meter above the foundation and is equipped with a water collection motor to deal with flooding.</li> <li>The factory has 4 sets of 2800kw emergency diesel generators and backup diesel to maintain production in case of temporary government power cuts.</li> </ol>
Opportunities	Adopt Low- Carbon Energy Projects and Adopt Energy-Saving Measures	Short-term (within 3 years)	<ol> <li>In 2018, 3,500 solar panels with an installation capacity of 0.9MW were fully installed on the roof of the Kunshan factory, generating approximately 1 million kWh of green electricity for the Kunshan factory each year.</li> <li>The hot water boiler in the dornitory of the Kunshan factory was changed from burning diesel oil to burning natural gas with a lower calorific value to avoid the increase in the company's production costs due to rising oil prices and reduce greenhouse gas emissions.</li> <li>The lighting fixtures in the factory area use the most energy- saving LED lamps to reduce the company's electricity consumption.</li> </ol>	<ol> <li>In the future, Clevo laptop computers will strive to reduce energy consumption and carbon emissions, provide new user experiences to customers, pursue the advancement of low-carbon technology, and maintain the market position.</li> <li>Every year, the factory performs routine equipment maintenance, confirms the efficiency of the factory's old equipment, and replaces the old equipment with efficient new equipment.</li> </ol>



# CLEVO<sup>®</sup> 02 Response to Climate Change

Aspects	Issues	Impact Period	Current Status for Climate Change Risks and Opportunities	Response Strategies and Management Measures
Opportunities	Develop/ Increase Low-Carbon Products	Short-term (within 3 years)	As the sustainable trend gains traction, brand owners and consumers are gradually shifting their preferences toward low- carbon and energy-saving products. Clevo regards green environmental protection as an important concept of product innovation. The company has strived to extend battery life through product design, usage, and end- of-life management; collaborate with Windows 11's energy-saving settings, such as power, battery, screen brightness, and dark mode, to save laptop energy consumption; and minimize charge cycles. Currently, the laptop computers produced by Clevo all meet the energy efficiency specifications Energy Star requires. Five laptops also passed the China Energy Label (CEL) energy-saving certification. In the future, we will continue to deploy low-carbon product R&D to grasp the low- carbon product market.	<ol> <li>In the future, Clevo laptop computers will strive to reduce energy consumption and carbon emissions, provide new user experiences to customers, pursue the advancement of low-carbon technology, and maintain the market position.</li> <li>Require low-carbon development from direct suppliers to increase the use of low-carbon materials and enhance the low-carbon image and added value of laptop computers.</li> <li>Review and evaluate the low- carbon development status of suppliers every year, and include them in the qualified supplier selection items.</li> </ol>





## 2.3 Climate Risk Management

Clevo's president convenes the Sustainable Development Task Force to identify climate risk and opportunity issues annually. Converge Clevo's potential climate issues through international trends and climate risk opportunities revealed by peers, and quantify and rank each issue's impact and occurrence opportunities to identify their significance. Then set goals and manage Clevo's climate risks and opportunities based on the key climate risk and opportunity factors.

The identification procedure is as follows:

Workflow	Workflow Description
Summary of Climate Issues	The potential climate risk opportunity issues related to Clevo operations were initially summarized using the climate risk/opportunity category classification suggested in the TCFD guidelines and collecting the climate risk opportunity issues disclosed by domestic and foreign peers in the CDP questionnaire and sustainability report.
Issue Identification	Design a questionnaire from Clevo's list of potential risks and opportunities. Ask Clevo's departments and factories to assess the degree of impact and occurrence time for each issue by evaluating factors such as historical experience, current policy and regulatory trends, and stakeholder requirements.
Materiality Analysis	The Sustainable Development Task Force is in charge of gathering the perspectives of various units on various climate opportunities and risks. The significance of each issue's impact on Clevo's operations is identified by aggregating and analyzing the scores of each unit on each issue in the questionnaire to identify Clevo's key climate risk and opportunity issues.
Management Response	Discuss specific response measures and management plans for future factories and departments based on assessing significant key climate risks and opportunities.

# 2.4 Indicators and Goals

Clevo has established climate-related management goals to improve climate resilience, implemented various goals in the operation and management of factories and departments, effectively managed the threats posed by climate risks, and strengthened Clevo's ability to respond to climate change. Clevo's Kunshan factory and Taipei headquarters completed the carbon inventory in 2022. In the future, we will use it as the base year to set carbon reduction targets. The Kunshan plant has set carbon reduction targets to reduce carbon by 1%, solid waste by 3%, and comprehensive energy consumption by 1% every year compared to the previous year. The goal is to execute carbon operation management and contribute to extreme climate mitigation.

Target Type	Target Description	Benchmark Year Comparison	Target Achievement Status
Carbon Reduction Target	Scope 1 and Scope 2 total carbon emissions are reduced by 1% each year compared with the previous year.	2022	During Execution
Energy Target	The total energy consumption is reduced by 1% yearly compared to the previous year.	2022	During Execution

# Environment Sustainability

Climate change is a serious worldwide problem. If not only devastates the global ecological habitat but also has a direct impact on biodiversity. Extreme weather also causes human losses in terms of life and property. Clevo has strived to mitigate the climate and environmental impacts by continuing to inspect and refine the environmental management system, strictly abiding by the law, actively investing in environmental protection, and publicly disclosing environmental performance-related information, demanding environmental protection actions from all employees. Clevo has partnered with its suppliers, customers, and consumers to fulfill its environmental responsibilities and obligations to exist in harmony and prosperity with the environment.

## Performance Highlighs

The Kunshan plant's energy-saving measures are equivalent to a carbon reduction of 33.31 tons. Kunshan plant purchases 1,080,595 kWh of solar energy generated on the roof of the plant area, equivalent to an emission reduction  $(CO_2e)$  of 575.8 tons of  $CO_2e$ .

#### environmental protection projects investment amount NT\$992,775

The annual carbon emission intensity of the Taipei headquarters was reduced by 13.1% compared to 2021.

## Association with SDGs

7 AFFORDABLE AND CLEAN ENERGY



**13** CLIMATE ACTION





# 3.1 Environmental Management

Clevo believes that effective environmental management is the critical and fundamental component for an enterprise to achieve long-term development. Clevo is a professional laptop computers manufacturer and service provider, and it cannot afford to be careless with its environmental management. Clevo meets every year to discuss various environmental management policies. Clevo's environmental management are guided by environmental indicators. We review and follow the PDCA cycle steps every year and continuously improve our environmental management policy. The PDCA cycle steps every year and continuously improve our environmental management policy. The importance of environmental management is publicized to colleagues through different channels. It also requires employees to integrate the management policy's content into their daily operations, propose specific environmental management plans and measures to improve their performance and actions and continue to practice the goal of a friendly environment. Clevo's environmental management policy includes the following:

- Follow the relevant environmental protection laws and regulations to be a legally compliant enterprise Note.<sup>Note\*</sup>
- Take preventive measures against pollution to reduce impacts on the environment.
- Make ongoing improvements to environmental management practices, and fulfill our responsibilities to the Earth.
- Actively classify, recycle, and reuse waste generated from corporate activities.
- Create communication and promotion channels for the environmental management system, and maintain frequent communication with external parties.

## 3.1.1 Environmental Management System

Clevo's Taipei headquarters is an office and R&D building, while the Kunshan factory is responsible for producing and manufacturing laptop computers. Therefore, Kunshan's potential impact on the environment is greater than that of the headquarters. The Kunshan factory has established an ISO 14001 environmental management system to reduce the impact of its operations on the external environment. The Kunshan factory adheres to the Plan-Do-Check-Action

(PDCA) philosophy and annually reviews each process operation's environmental considerations and hazards. The goal is to identify risks and conduct external re-examinations and audits every three years to keep the certificate valid. The most recent is the new version of ISO 14001:2015 environmental management system verification, which was implemented in April 2020. In addition, Clevo has also referenced local regulatory requirements to formulate its environmental management policies and goals and continues to fulfill the vision of sustainable operation.



Kunshan Plant's ISO14001:2015 Environmental Management System Certification (valid until April 7, 2023)

## 3.1.2 Environmental Monitoring

The ISO 14001 environmental management system is the main management system adopted by Clevo in the manufacturing process. This standard establishes internal management procedures for various environmental projects, and the air quality, discharge water quality, noise, and perimeter of the working environment are monitored and improved annually and regularly. Air pollutants are among the four environmental testing items.

Clevo not only detects environmental data independently throughout the factory area but also entrusts a third notary organization to assist in the detection of environmental data annually to ensure that the environmental management system can be effectively implemented. Based on the findings of each test, Clevo can determine whether various environmental factors and indicators are in compliance with national and local laws and regulations and ensure that they align with the environmental management objectives. If abnormal environmental data or potentially significant impacts are discovered, the plant will convene immediately to discuss and propose appropriate improvement measures. Clevo' s environmental testing results 2022 are consistent with internal and external norms and standards, and no significant pollution leakage has occurred. Clevo will strive to maintain its excellent performance.

Clevo invested a total of NT\$992,775<sup>Note\*</sup> in 2022 to perform various environmental operations, such as air quality monitoring, water quality testing, energy-saving measures, waste removal, noise testing, and other environmental management operations. We will continue to assess whether the detection value and frequency meet current needs and maintain long-term management.

Environmontal	Kapok Computer (Kunshan)			Taipei headquarters		
Protection Expenditure Items	Inspection Frequency	Self / Outsourced Inspection	Cost(RMB)	Inspection Frequency	Self / Outsourced Inspection	Cost(NTD)
Air quality	Once / year	Outsourced		Twice / year	Outsourced	-
Quality of effluents	Once / year	Outsourced	11,000	Once / year	Outsourced	-
Noise	Once / year	Outsourced	11,000	-	-	-
Air pollutants in the nearby area	Once / year	Outsourced		-	-	-
Waste removal fees	Twice / year	Outsourced	23,520	-	-	-
Wastewater treatment fees	Once / year	Outsourced	148,502	Once / month	Outsourced	144,000
ISO14001 external audit fee	-	Outsourced	13,000	-	-	-
Total investment amount (NTD)			992	,775		

### Environment Protection Related Expenditures for Taipei Headquarters and Kunshan Plant - 2022

Note 1: The Taipei headquarters has conducted carbon dioxide testing for the working environment. The Kunshan plant operating environment testing items include other dust (total dust), tin dioxide, sodium carbonate, lead fume, dipropylene glycol methyl ether, cyclohexanone, ethyl acetate, n-butanol, methanol, ether, isophorone.

Note\* The total is derived by adding expenses from Taipei Headquarters (in NTD) and Kunshan Plant (in RMB), rounded to the nearest integer. In December 2022, the exchange rate of RMB to NTD was calculated at 4.33.

## 3.2 Energy and Greenhouse Gas Management

One of the key propositions of the United Nations Climate Change Conference on climate strategy in recent years has been to phase out the use of fossil fuels. As a result, under the current global sustainable development trend, companies cannot ignore energy transition and greenhouse gas management. Clevo' s Kunshan plant began purchasing green electricity in 2018 in response to the energy transformation trend, and the ISO 50001 energy management system was implemented to identify key energy consumption in the plant and propose improvement strategies to reduce the demand for fossil fuels and greenhouse gas emissions year by year. In addition, Clevo has established a task force to track carbon reduction progress and implement greenhouse gas inventory work. The annual inventory for 2022 has been completed at the Taipei headquarters. The greenhouse gas inventory project at the Kunshan factory is expected to begin in 2023. Clevo takes a proactive approach to climate change. Face it, and keep implementing carbon-cutting measures and regular inventory operations to achieve sustainable development goals.

## 3.2.1 Energy Usage and Greenhouse Gas Emission

Electricity dominates the energy consumption structure of the Clevo's sites, which include the lighting and air conditioning of the Kunshan plant and the Taipei headquarters building. The second source of energy consumption is the natural gas boiler in the Kunshan plant' s employee dormitory, and a minor source of energy consumption is the gasoline and diesel used for official vehicles and the plant' s emergency generators. The Xinzhuang headquarters in Taipei is an office and R&D center, so daily electricity consumption accounts for a large part of the total energy consumption. Therefore, energy savings in the office building's air conditioning and lighting are critical for Clevo headquarters to implement energy-saving measures.

In March 2022, the headquarters was relocated to Xinzhuang Building, and the carbon inventory operation (scope 1 + scope 2) was implemented in the first year after the relocation, according to the GHG Protocol guidelines. The total carbon emissions of the Clevo headquarters in 2022 was 452.8 tons CO<sub>2</sub>e, with electricity consumption in the office accounting for the majority. The rest of the emission sources, such as refrigerant escape and official vehicle gasoline, accounted for a small amount. The total energy consumption was 3,194.29 GJ, about 27.3% lower than that of the previous year, of which electricity consumption accounted for 96.3% of the total energy consumption.

The relocation of the headquarters in 2022 may be the main reason for the large change in electricity consumption compared with 2021. In the future, we will continue monitoring changes in electricity intensity to track and manage the office's electricity consumption trend in the new building. Clevo has established timer-switching measures on the air-conditioning in the Xinzhuang headquarters to reduce electricity consumption during off-peak hours for off-duty employees. The company also reviews the electricity consumption every month to track the energy-saving and carbon reduction progress.

Moreover, Clevo has continued to promote the concept of energy saving and carbon reduction to its colleagues through various channels to inspire energy saving and carbon reduction habits during daily life via the following management measures:

- 1. Avoid idling powered equipment once turned on, and cut power after use where possible.
- 2. Employees are asked to conserve power by turning off lights when leaving the workplace.
- The air conditioner's temperature is controlled at 26° C in summer and below 20° C 3. in winter. It is forbidden to open the windows while the air conditioners are operating.
- For areas that are used for intermittent (non-continuous) production activities, lighting 4. must be turned off when there is no production activity.
- 5. Energy-efficient equipment should be used in new/replacement/expansion projects where possible.
- 6. Personal computers and office equipment are to be turned off after work.
- 7. Recycling requirements for lubricant and waste oil are strictly enforced, and employees are being instructed to conserve the use of oil to a reasonable extent.
- 8. Power generators are used only at times of outage or insufficient local power supply, which minimizes the use of diesel.
- 9. Gasoline conservation awareness is being promoted among drivers of corporate vehicles.

Total Inte	rnal Energy Consumption	2020	2021	2022
Non-renewable fuel	Gasoline (liters)	5,982	2,455	3,562
Purchased energy	Purchased gray electricity (kWh)	1,202,388	1,197,491	854,793
The gross calorific value of energy consumed (GJ)		4,525	4,392	3,194
Density (GJ/ping)		1.02	0.99	0.84

## Energy Consumption at Taipei Headquarters in the Last 3 Years

Note 1: The statistical scope of energy consumption data covers

 (1) 2020-2021, the Sanchong - Clevo Building 1F, 9F, 11-13F.
 (2) In 2022, Clevo's headquarters changed, so the electricity consumption meter benchmark also changed. It was Sanchong - Clevo Building BF1-BF3, 1F, (2) If 2022, before a line adjustment of integration of the destination of the destina calorific value table of the Energy Bureau of the Ministry of Economic Affairs

Note 3: The density's denominator is the building area (ping). The inherent area was changed due to the relocation of the headquarters in March 2022 (1) Floor area from 2020 - March 2022: 4,422.29 pings

(2) Floor area April 2022 - December 2022: 3,810.36 pings

### Greenhouse Gas Emission of Taipei Headquarters in the Last 3 Years



Note 1: The greenhouse gas inventory boundary is: (1) 2020-2022, the Sanchong - Clevo Building 1F, 9F, 11-13F. (2) Sanchong - Clevo Building BF1-BF3, 1F, 9F, 11-13F from January 2022 to March 2022; and Clevo building 31-36F from April 2022 to December 2022 Note 2: Scope 1 direct emission: covers refrigerant escape and mobile emission sources from official vehicles. Scope 2 Energy Indirect Emissions: The emission

source is purchased electricity.

Note 3: Inventory methodology: Statistical calculations are executed according to the GHG Protocol and the Greenhouse Gas Inspection Guidelines of the Executive Yuan's Environmental Protection Agency. Note 3: Greenhouse gas factor source: The emission coefficient is from the Environmental Protection Agency's 6.0.4 version of the greenhouse gas emission coefficient management table, announced in 2019, and the GWP value is from the IPCC Sixth Assessment Report (2021).

Note 5: The carbon emission coefficient of Scope 2 purchased electricity in 2022 is calculated based on the 2022 electricity carbon emission coefficient

announced by the Energy Bureau of 0.495kg CO<sub>2</sub>e/degree. Note 6: Greenhouse gas inventory scope includes a total of 7 greenhouse gases: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>).

Note 7: Greenhouse gas inventory is implemented using the operation control method.

Note 8: Emission intensity = (Scope 1 + Scope 2 emissions CO<sub>2</sub>e)/total office floor area (ping). Note 9: From 2020 to 2021, the total leased area of the Clevo Building was 4,422.29 ping. After the headquarters relocation in March 2022, the total leased area of the Xinzhuang headquarters was 3,810.36 ping

## **2022** Clevo ESG Report 2022

The Kunshan plant mainly executes Clevo's laptops manufacturing. So the factory area's energy consumption and carbon emissions are much higher than those of the Taipei headquarters office. Therefore, in addition to incorporating energy management into daily life (such as dormitories and parking sheds) and business at the Kunshan plant, we have gradually increased the proportion of renewable energy used in the factory area by constructing solar panels for self-use and continuously evaluated the energy efficiency of factory equipment. In 2022, the Kunshan factory implemented an energy-saving plan to switch from an adsorption dryer to a refrigerated dryer. The goal is to reduce air compressor gas emissions during the drying process, the number of air compressors turned on to lower power consumption, and the factory's overall electricity reliance.

In 2022, the total energy consumption of the Kunshan plant was31,055 GJ. It decreased by 16.5% compared to 2021, mainly because of the month-long power supply restriction days in 2021, resulting in a large increase in the use of diesel generators in the plant. Due to reduced power-rationing days in 2022, diesel oil consumption was also significantly reduced. Furthermore, total laptop computers production in 2022 also fell by 22.4% compared to 2021, contributing to decreased energy demand in the plant area. Overall, when energy efficiency is measured in terms of unit output, the energy intensity in 2022 was 0.019 GJ/thousand units, a slight increase from 2021.

Total Internal Energy Consumption		2020	2021	2022
	Gasoline (liters)	9,230	5,000	4,258
	Diesel (tons)	7,059	70,588	9,408
	Liquefied natural gas (m3)	107,028	79,268	80,012
Outsourced non- renewable energy	Purchased gray electricity (kWh)	6,949,596	7,651,025	6,574,084
	The total calorific value of non-renewable energy consumption (GJ)	29,612	33,231	27,164
	Purchased solar energy (kWh)	1,058,524	1,096,281	1,080,595
Renewable energy	The total calorific value of renewable energy consumption (GJ)	3,811	3,947	3,891
The gross calorific value of energy consumed (GJ)		33,424	37,179	31,055
Density (GJ/number of lapte	ops produced)	0.022	0.018	0.019

### Energy Consumption at Kunshan Plant in the Last 3 Years

Note 1: The statistical scope of energy consumption data covers: Kapok Computer (Kunshan) plant

Note 2: The coefficient is taken from Table 2.1 of the Guidance for Accounting Method and Reporting of Greenhouse Gas Emissions from Electronic Equipment Manufacturing Enterprises (trial implementation).

Note 3: The output density denominator = the number of laptop computers produced in the year.

Since its inception, the Kunshan plant has voluntarily conducted greenhouse gas inventory operations to continuously monitor carbon emissions and reduce the carbon footprint of products. It also received the ISO 14064-1 verification report from the external third-party inspection agency SGS in 2022. The total emission of the Kunshan plant in 2022 was 3,367.8 tons CO<sub>2</sub>e, 65.2% decrease from 2021. The emission intensity was 2.09 kg CO<sub>2</sub>e / laptop. The following are the reasons for the Kunshan plant's lower greenhouse gas emission intensity in 2022 compared to 2021:

1. In April 2022, production in Kunshan was closed due to COVID-19. So there were fewer business trips and customers in 2022, and the use of diesel for the company's official vehicles also decreased.



- From the end of September 2021 to October 2021, Kunshan Power Supply Company 2. restricted power, and the plant turned on its generator for about 30 days. In 2022, the plant's power was restricted for 3 days. Therefore, the consumption of diesel power generation in 2022 was significantly reduced.
- 3. In 2022, the number of units shipped by the Kunshan plant was reduced by 465,000 compared to 2021. Coupled with the implementation of energy-saving projects in the factory area, the overall electricity consumption and greenhouse gas emissions dropped significantly.



## Greenhouse Gas Emission of Kunshan Plant in the Last 3 Years

Note 1: The greenhouse gas inventory boundary is: the Kunshan plant. Note 2: Scope 1 direct emission: Diesel and gasoline from official vehicles, diesel from emergency generators, escape from refrigerant equipment, escape from CO2 fire extinguishers, and escape from septic tanks. Scope 2 Energy Indirect Emissions: Purchased electricity.

Note 3: Inventory methodology: Statistical calculations are carried out according to ISO14064-1.

Note 4: Source of greenhouse gas coefficient: The coefficient comes from Table 2.1 of the Greenhouse Gas Emissions Accounting Method and Reporting Guidelines for Electronic Equipment Manufacturing Enterprises (Trial) and the GWP value refers to the IPCC Sixth Assessment Report (2021) Note 5: The carbon emission coefficient of Scope 2 purchased electricity in 2022 refers to the national grid average emission factor of 0.5703 ton CO2/ MWh in 2022.

Note 6: Greenhouse gas inventory scope includes a total of 7 greenhouse gases: carbon dioxide (CO<sub>2</sub>), methane (sub-CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>2</sub>), and nitrogen trifluoride (NF<sub>3</sub>).
 Note 7: Greenhouse gas inventory is implemented using the operation control method.

Note 8: (Scope 1 + Scope 2 emissions CO<sub>2</sub>e)/number of computers produced annually (1000 units).

# 2022 Clevo ESG Report 2022

## 3.2.2 Solar Power

Reducing the use of fossil fuels is a key resolution of COP26. Renewable energy development has gradually become an important means for global companies to reduce carbon emissions. In addition to optimizing energy efficiency and reducing greenhouse gas emissions, Clevo is also active in integrating resources and idle space. The Kunshan plant was equipped with solar energy equipment in January 2018. The manufacturer completed the construction of 3,500 solar panels on the roof of the factory building, and a total of 0.9MW installation capacity has been built. The Kunshan plant has purchased green electricity generated by solar energy from the solar equipment manufacturer, which can generate about 1 million kWh of green electricity for the Kunshan plant to use every year. In 2022, the solar energy system generated a total of 1,080,595 kilowatt-hours. The purchased solar power accounted for 14.1% of the total power consumption of the Kunshan plant, which is equivalent to reducing the greenhouse gas emissions of 575.8 tons CO<sub>2</sub>e from purchased power. In the future, Clevo will continue to take renewable energy deployment as its responsibility, evaluating the possibility of increasing the proportion of renewable energy, reducing the demand for gray electricity procurement in the factory area, and contributing to global climate change mitigation.





## The Proportion of Renewable Energy in the Kunshan Plant in the Last 3 Years

## 3.2.3 Energy Saving and Carbon Reduction Measures

Most of Clevo's energy consumption is for factory equipment, office lighting, and air conditioning. To achieve carbon reduction and energy savings, it is necessary to continuously evaluate the possibility of saving electricity in the office and factory. Clevo's office area was outfitted with air-conditioning electronic timers in 2022 to reduce unnecessary air-conditioning energy consumption in the office after leaving work and to reduce annual air-conditioning electricity consumption. To reduce energy consumption, the Kunshan plant also installs timers for all lighting equipment and exhaust fans in the factory area, replaces high-energy-consuming lighting lamps with low-wattage LED lamps, and updates air-conditioning inverters. In 2022, the overall energy-conservation measures were estimated to reduce the annual carbon dioxide equivalent to about 33.31 tons of carbon dioxide equivalent. Clevo will continue to seek improvements that can be made in the factory area and offices every year and implement energy conservation and carbon-reduction plans.

Purchased Gray Electricity	Conservation Plan Description	Total Power Savings (kWh)	Total Power Savings (GJ)	Annual Carbon Reduction (ton CO2e)	Cost for Conservation (NTD)
Install timers for control switches of factory aisles, bathroom fluorescent lamps, and exhaust fans.	Install timers for control switches of factory aisles, bathroom fluorescent lamps, and exhaust fans.	10,800	38.88	6.16	5,400
LED lights replace the outdoor street high-pressure sodium lights in the plant area	A total of 39 outdoor street high- pressure sodium lights (250W/unit) in the plant area were replaced by LED lights (80W/unit)	29,040	104.54	16.56	14,596
Install frequency converters in SMT air conditioning boxes to reduce power.	Install inverters in AH-11 and AH- 13 air-conditioning boxes in the SMT workshop.	18,571	66.86	10.59	15,600

58,411

210.28

#### Statistic Table for Kunshan Energy Conservation Measures in 2022

Total



exhaust fan control time controller







33.31

35,596

LED lights replace the outdoor street high-pressure sodium lights in the plant area

# 3.3 Water Resource Management

Water resource abundance is closely related to climate and environmental factors. As climate change worsens, the global rainfall frequency and uneven distribution will deteriorate. Extreme drought and heavy rain disasters occasionally occur in Taiwan and mainland China. These disasters directly affect production and domestic water use in the factory area, and they may also disrupt the supply chain's raw material transportation, indirectly increasing operational interruption risks. This emphasizes the importance of thorough water resource risk assessment and management for enterprises.

## 3.3.1 Water Risk Assessment

The Aqueduct Water Risk Atlas Tool was used in 2022 to analyze Clevo and Kunshan plant facilities in water risk areas to prevent water shortage risks at each operating site. The goal is to evaluate the water withdrawal and availability of water users in the local catchment area and determine whether the recycled surface water to groundwater supply ratio is sufficient. The analysis showed that the Taiwan headquarters is located in a low-water-risk area and relatively free from water intake risks. The Kunshan factory is in a high water risk area (40-80%). However, most of the water used in the Kunshan factory is used for people's livelihood instead of process water. The analysis showed a relatively low impact on the local water catchment area. To avoid water shortages, the Kunshan plant has strengthened emergency response measures for drought, water cuts, and water shortages and implemented daily water-conservation measures to reduce the intensity of water intake in the plant.

The Kunshan plant uses the ISO 14001 environmental management system to formulate



control measures for water resources and water pollution prevention and control operations and strictly manages the use of water resources and wastewater discharge. We also adopt the "Energy and Resource Management Operating Procedures" to regulate the water resource use requirements and continue to advocate water-saving policies focusing on water-related issues and daily operations to colleagues. The policies advocated include:

- 1. Strengthen drip and leak management and regular water inspections.
- 2. Submission of maintenance or replacement request upon discovery of any damage to faucet or valve.
- 3. Use the loop to Recycle and reuse the cooling water from the cooling systems and other equipment.
- 4. Always remind everyone to pay attention to water conservation and post relevant water conservation signs in conspicuous places.

## 3.3.2 Water Intake, Consumption, and Discharge

Although Clevo's manufacturing process does not rely heavily on water resources, if wastewater from the manufacturing process is discharged into natural streams without proper treatment, it will have a direct impact on the local water ecosystem as well as the daily lives of residents in the surrounding communities who uses it for drink water. Therefore, water resource management is critical to Clevo's environmental management. Clevo will continue strengthening water resource recycling and improving overall water use efficiency.

Clevo Taipei headquarters is an office building mainly engaged in administrative operations and R&D. Its water resources are mainly used for people's livelihood. The annual water withdrawal is 7.74 million liters, and 100% comes from tap water. In March 2022, the headquarters was moved from the original Sanchong office building to Xinzhuang, so the building's property management calculates the statistical method of water withdrawal data, and the number of leased floors is allocated. In the future, the annual water intensity measurement changes will be continuously monitored to observe the water withdrawal trend of the new building.



### Water Resource Usage by the Taipei Headquarters in the Last 3 Years

Note 1: Clevo's headquarters does not have water intake from seawater, high water pressure areas, or water intake from total dissolved solids > 1,000 mg/L Note 2: The type of wastewater discharged from Clevo headquarters is only domestic. The office building has a water treatment pool installed according to

regulations that treat wastewater from living activities and discharge it only when the quality has met the statutory standards. Note 3: Water withdrawal = water discharge + water consumption. Since the building has no statistical water consumption data from 2022, it is estimated based on the average water consumption ratio from 2020-2021.

Note 4: Water withdrawal intensity = annual water withdrawal / office floor area (ping). Note 5: From 2020 to 2021, the total leased area of the Clevo Building was 4,422.29 ping. After the headquarters relocation in March 2022, the total leased area of the Xinzhuang headquarters was 3,810.36 ping.

100% of the Kunshan plant's water intake comes from municipal tap water. Because the Kunshan plant is primarily responsible for laptop computers production, it uses air-conditioning cooling water and general household water. However, the process does not require much water, and domestic wastewater is transported to the site. After entering the municipal sewage pipeline, it is centralized at a nearby sewage treatment station for treatment before being discharged to the stream.

In 2022, Kunshan's total annual water withdrawal was 31.7 million liters, a decrease of 65.6% from 2021. This is primarily because the number of laptops produced in 2022 reduced by 465,110 units compared to 2021, resulting in a significant reduction in employee working time and domestic water consumption in the plant area.



Water Resource Usage of Kunshan Plant in the Last 3 Years

Note 1: Clevo's Kunshan plant is located in a high-water stress area, and there is no water source from seawater with total dissolved solids >1,000 mg/L. Note 2: The type of wastewater discharged from Clevo headquarters is only domestic. The office building has a water treatment pool installed according to regulations that treat wastewater from living activities and discharge it only when the quality has met the statutory standards.

Note 3: Water withdrawal = water discharge + water consumption. Since the building has no statistical water consumption data from 2022, it is estimated based on the average water consumption ratio from 2020-2021.

Note 4: Water withdrawal intensity = total annual water withdrawal/annual laptop output (1000 units).

## 3.3.3 Wastewater Discharge Policies and Reduction Practices

Clevo is committed to complying with environmental laws and regulations, and we require wastewater discharged from all operating sites to comply with local regulations. The Taipei headquarters comprises offices with Domestic sewage is produced instead of processed wastewater. A septic tank is installed according to the law, and domestic sewage is directly collected and discharged into the public sewage sewer.

Although the Kunshan plant does not have process wastewater, a third-party water quality testing company is regularly outsourced to conduct wastewater testing yearly to reduce the potential environmental impact of wastewater in the factory area. Water quality testing items include pH,COD, ammonia nitrogen, total phosphorus, and oil. All wastewater testing results were significantly lower than the values required by local regulations in 2022, and no discharge regulations were violated. The rainwater and sewage diversion improvement project was implemented in the Kunshan dormitory area throughout 2021. The domestic waste and sewage generated in the dormitory area are converged to the waste and sewage treatment plant for discharge operations. The rainwater and sewage diversion is in good condition, and there is no blockage or overflow.

## Kunshan Factory Wastewater Discharge Compliance Status

Water Quality Sandard/factory Area	Compliance Status	Local Regulatory Requirements
рН	7.3	6.5~9.5
COD (mg/L)	69	500
Ammonia nitrogen (mg/L)	9.52	45
Total phosphorus (mg/L)	1.35	8
Grease (mg/L)	0.39	100

The Kunshan plant replaced the toilet sink faucet from the push type to the induction type in 2022 to reduce people's water consumption in the factory area. The push-type faucet discharges water longer, resulting in unnecessary waste of water resources. The sensor-type faucet can increase or decrease the water discharge time according to the use time to achieve watersaving effects.

Note: The Kunshan plant discharges wastewater according to the "Law of the People's Republic of China on the Prevention and Control of Water Pollution" and "Regulations on Urban Drainage and Sewage Treatment."



Front push-type faucet before improvement

Sensor-type faucet after improvement



## 3.4 Waste Management

As a professional manufacturer of laptop computers, Clevo needs to use complex components and chemical raw materials in the production process. If the downstream waste removal and disposal companies do not properly handle the waste according to the type of waste, random disposal may cause heavy metal or chemical, environmental pollution, which may have potential impacts on the community environment and human health. Therefore, Clevo places a high value on the back-end treatment of waste generated during each manufacturing process.

## 3.4.1 Value Chain Waste Assessment

Clevo has adhered to international environmental protection standards from the product design stage, is committed to reducing the use of toxic substances, and has developed internal "Waste Control Operation Procedures" according to laws and regulations, as well as various international environmental protection standards and requirements. The goal is to require all employees to strictly adhere to waste operations, dispose of waste according to procedures, and improve waste disposal.

If the raw materials used in the manufacturing process contain chemicals, they must be handled in strict accordance with applicable procedures to avoid negative consequences and impacts on the surrounding environment and community residents caused by leakage incidents.

The administrative and R&D-based Taipei headquarters produces general household waste, and no hazardous industrial waste is generated. Clevo has continued to conduct publicity, supervision, and inspections through the "Waste Management Measures" and vigorously promotes waste reduction and classification. The goal is to promote resource recycling and reuse to reduce waste emissions and improve resource use efficiency.



#### Clevo Value Chain Waste Disposal Flow Chart

## 3.4.2 Generation and Disposal of Waste

The Kunshan plant generates a lot of waste since it is Clevo's main production base. The Kunshan plant has strictly adhered to local regulations and internal processing procedures to maximize the benefits of raw material resources and make the best use of raw materials in manufacturing. The relevant responsible personnel must properly store waste by category before handing it over to a qualified clearing company approved by the government for off-site disposal. The total waste generated by the Clevo headquarters and Kunshan plant in 2022 was 557.3 metric tons, which decreased by 32.9% from 2021, mainly due to a decrease in production volume, which resulted in a significant reduction of waste from raw and packaging materials. Overall, general waste accounts for 91.1% of the bulk of the waste, mainly from three categories: waste cardboard, waste plastic, and cartons from packaging and raw material suppliers. Hazardous waste accounted for 8.9% of total waste, primarily from circuit boards, board trims, waste-activated carbon, and other manufacturing leftovers. Our hazardous waste warehouses are established according to waste storage facility standards, including ground hardening, installation monitoring, drainage trenches, waterproof slopes, door locks, and other facilities. The goal is to ensure that hazardous waste collection, storage, transfer, utilization, and disposal comply with national regulations.

The Kunshan plant's waste is collected, stored, and transported by the administrative department. We also implemented statistics and classification and uniformly entrust waste transfer and disposal to a third-party qualified waste disposal company approved by the competent authority every month. Before undertaking waste treatment operations, all waste treatment contractors must pass Clevo's audit and have a valid license approved by the government to ensure that all Clevo waste is properly disposed of according to their types and do not negatively impact the external environment.



	Total Waste Divide	ed by Item	Total Amount Divided by Hazardous / Non-hazardous			
Category	Waste Items	Production Volume (tons)	%	Waste Treatment Method	Production Volume (tons)	%
	Carton boxes	96.00	17.2		509.00	91.3
	Plastic	10.00	1.8			
	Foam	2.00	0.4	Recycled raw		
General	Waste paper	190.00	34.1	materials		
waste	Waste foam	46.00	8.3			
	Waste plastic	100.00	17.9			
	Industrial waste	49.00	8.8	Incineration		
	Clevo building household garbage	16.00	2.9	(non-energy recovery)		
	Circuit board edges	38.31	6.9	Recycled raw	48.30	8.7
	Waste activated carbon	4.80	0.9	materials		
	Waste red plastic box	0.24	0.1			
Hazardous	Waste dust-free paper	0.39	0.1			
waste	Waste dust-free cloth	1.49	0.3	Incineration(non-		
	Waste packaging barrel	1.20	0.2	energy recovery)		
	Waste cleaning agent	0.94	0.2			
	Waste solder paste box	0.93	0.2			
Total waste generated		557.30	100.0	The total amount of off-site processing	557.30	100

### Waste Generation by the Taipei Headquarters and the Kunshan Plant in 2022

Note 1: The waste data of the Kunshan plant comes from the daily weight of the waste collected in the factory. Note 2: The waste in the Clevo building is uniformly handled by the building property management. The total amount of waste is estimated based on the monthly clearing volume signed by the building and the waste removal company multiplied by the proportion of leased floors.

