



# 5

## Environment



Climate Change



Environmental Management System



Water Resource Management



Waste Management



Chemicals Management



## Management approach for material issues

### Climate change responses

#### Meaning to the Group

Following the UN's adoption of the Paris Agreement, climate change has become an issue of focus for all governments and enterprises. As a world-class company, the Group has a duty to lead the industry towards a low-carbon economy and society.

#### Policies and Commitments

The Group proposed the 1.5°C carbon reduction initiative, put forward three climate targets, and continues to advance energy and carbon reduction measures and other environmental impacts that mitigate the impacts of climate change, thereby achieving our responsibilities of protecting the environment and caring for the planet as we exert our influence on global industrial chains.

#### Goals and Targets

##### Short-term goals

- Adhered to NDCs and carbon emissions policies of local governments and complied with international and local environmental protection laws, incurring zero violations.
- Proposed commercially ambitious 1.5°C carbon reduction scenario, which we expect to be validated and approved by the Science Based Targets initiative (SBTi) by 2023.
- Respond to and act upon the 3 goals proposed by the Climate Action 100+ Steering Committee:
  - a Strengthen climate change governance.
  - b Take action toward the group's greenhouse gas (GHG) emissions across the value chain.
  - c Provide disclosures in accordance with the Climate-Related Financial Disclosure Recommendations (TCFD).

● Achieved waste conversion rates of 100% and lowered incineration rates to less than 10%.

##### Mid- to long-term goals

- GHG emissions across the value chain are consistent with the goals of the Paris Agreement and aim to achieve the goal of net zero GHG emissions by 2050.
- Achieve zero waste factories.

#### Grievance Mechanism

Please see Section [Stakeholder Communication and Responsibilities](#) for details.

#### Evaluation of the Management Approach

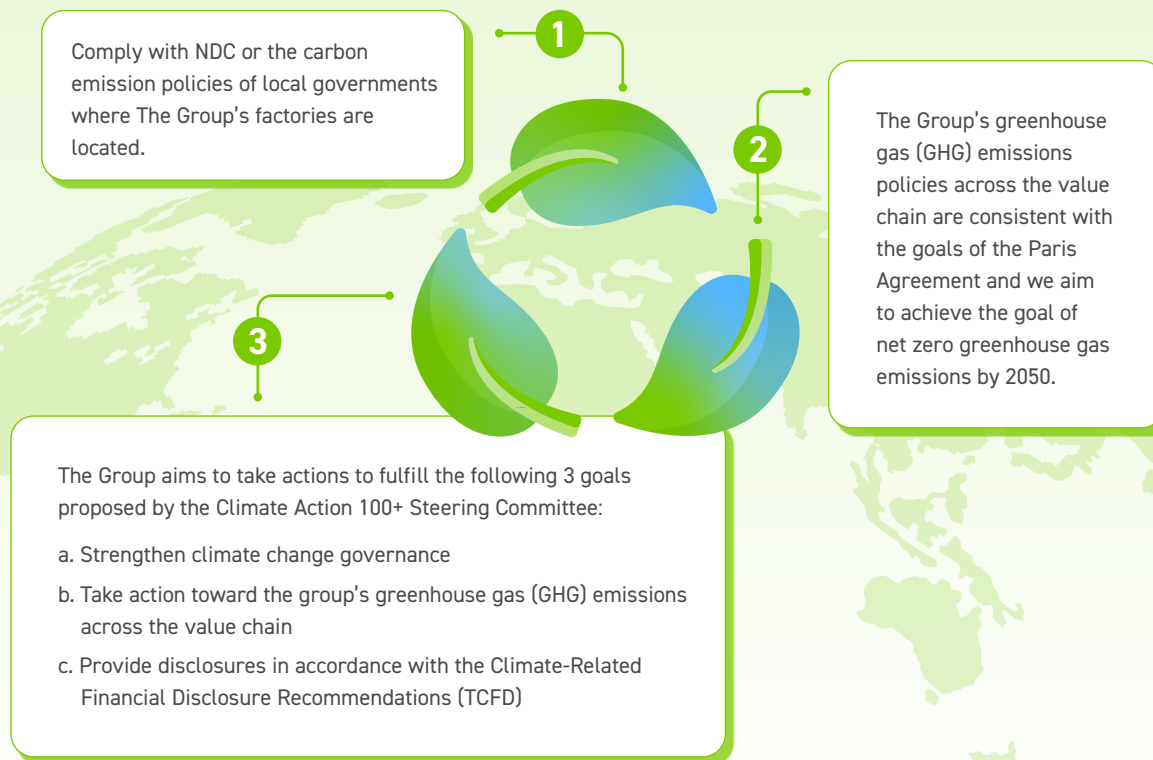
- Our energy and carbon reduction division conducted quarterly and annual energy reduction evaluations to achieve our energy and carbon reduction goals.
- We conduct external audits for management systems such as ISO 14001, ISO 50001, and ISO 14064-1.
- We hold management review meetings each year to discuss and track our energy and carbon reduction targets.

#### Specific Actions

- In 2020, CO<sub>2</sub> emissions per unit of revenue reduced 4.44%, and reduced 23.27% compared with 2015, achieving the Group's intermediate climate goals.
- The Group's energy-saving target for 2020 was 4.50%. The actual energy-saving rate was 5.18%; cumulative energy reductions from 2016-2020 amounted to 26.06%, successfully achieving the Group's mid- to long-term energy-saving goal.
- Invested 1.356 billion NTD in 1,751 energy-saving projects with total energy savings of 506 million kWh, total carbon reductions of 312,083 tCO<sub>2</sub>e, and energy-saving benefits equivalent to 1.339 billion NTD.
- Total global usage of clean energies reached 1,048.56 million kWh, and clean energy usage ratios were 12.45%.

## The Group Climate Action 100+ Net Zero Emission Goal and Commitment

Following the UN's adoption of the Paris Agreement and confirmation of global carbon reduction targets, governments all around the world have voluntarily proposed Nationally Determined Contributions (NDCs) and carbon neutrality targets. As a leader in the global electronics and technology industries, the Group has a duty to realize its social responsibilities. Therefore, we submitted our commercially ambitious 1.5°C carbon reduction statement to the SBTi and committed to a goal of zero emissions by 2050. We have proposed three climate targets to pave the way for global industries and a future of low-carbon economies and societies.



## Climate Change


The Group has proposed three climate targets in response to climate change impacts and has adopted internationally recognized standards and frameworks to analyze and manage global climate change trends and international responses. We identified and assessed climate risks and opportunities for the formulation of climate change adjustments and mitigation strategies. Climate change issues were compiled by our energy and carbon reduction division. The Group formulated energy and carbon reduction plans and guidelines for each factory which were implemented by the energy and carbon reduction units at each factory to reduce carbon emissions and energy resource usage. Our energy and carbon reduction division is responsible for regular reporting of implementation results to the F&A division, allowing senior management to keep abreast of climate impacts in the Group and facilitate better decision-making. Additionally, we plan to disclose our climate change response measures through participation in the Carbon Disclosure Project (CDP).

We are making strides toward our three climate targets and continue to advance our energy and carbon reduction measures for mitigation of climate change impacts, thereby achieving our responsibilities of protecting the environment and caring for the planet as we exert our influence on global industrial chains.

## Risks and Opportunities

In order to respond to climate change impacts, we take stock of internal operations, legal regulations, client requirements and expectations, and international development trends and research reports; identify and assess climate change risks and opportunities; and propose

relevant response measures to reduce and prevent adverse effects of climate risks while remaining attentive of climate opportunities, thereby establishing a culture of environmental sustainability which is beneficial for the Group.

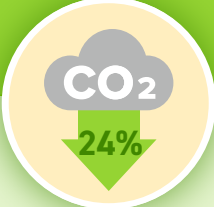
Climate Risks	Financial Impacts	Description	Group Responses
 <p><b>Transformation risks</b> Enhanced emissions - reporting obligations</p>	Increased operating costs	The Group is legally required to report, disclose, and comply with environmental laws. We continually lower our carbon emissions to reduce legal impacts on the Group, increasing our operating costs.	To achieve China's Work Plan for Controlling Greenhouse Gas Emission during the 13 <sup>th</sup> Five-Year Plan Period, we set 2015 as our base year and planned to achieve an energy-saving rate of 22% by 2020. The Group has invested large amounts of human and financial resources in improving energy-saving technologies. In 2020, we invested 1.356 billion NTD in 1,751 energy-saving projects with total energy savings of 506 million kWh and energy-saving benefits equivalent to 1.339 billion NTD.
 <p><b>Physical risks</b> Increased severity of extreme weather events such as cyclones and floods</p>	Increased operating costs  Increased indirect operating costs	Some of our factories are located in areas with extreme weather risks, which could cause operational interruptions, damage to facilities, or impact the Group's delivery schedules, increasing operating costs.  Some of our factories are located in areas with extreme weather risks. If production capacities fall or are interrupted, if product delivery is interrupted, or if our supply chains are impacted, this could cause reduced production capacity due to insufficient component amounts, which in turn affect our delivery schedules.	We have formulated emergency response plans and related measures. Our CSR team actively collaborates with various departments to implement social and environmental measures using systematic methods that effectively resolve and mitigate risks for our factories and suppliers.

Climate Opportunities	Financial Impacts	Description	Group Responses
 <p><b>Use of more efficient production</b></p>	<p>Reduced operating costs</p>	<p>As a leading global technology company, we strive to improve energy efficiency and have commenced various energy-saving projects. To achieve China's Work Plan for Controlling Greenhouse Gas Emission during the 13<sup>th</sup> Five-Year Plan Period, we set 2015 as our base year and planned to achieve an energy-saving rate of 22% by 2020. We reduce operating costs for the Group through continued improvement of production and energy usage efficiencies.</p>	<p>We fully utilize our technological advantages to expand application of IoT and energy usage through implementation of incentive measures, energy-saving audits, and enhancements of energy-saving technologies, thereby continuing to improve our production and energy usage efficiencies. In 2020, we invested 1.356 billion NTD in 1,751 energy-saving projects with total energy savings of 506 million kWh and energy-saving benefits equivalent to 1.339 billion NTD.</p>
 <p><b>Use of lower-emission sources of energy</b></p>	<p>Reduced indirect operating costs</p>	<p>Most of our clients are brand enterprises, many of which are requiring suppliers to improve their environmental performance. We consider it our duty to make continued advances in environmental performance, including gradual increases of clean energies. We increased our installation capacity for clean energies and generated power for internal usage to reduce operating costs.</p>	<p>In 2020, the Group achieved a total installed capacity of 257MW and generated 284.97 million kWh per year through self-generated and purchased energies. Total global usage of clean energies reached 1,048.56 million kWh in 2020, and clean energy usage ratios were 12.45%.</p>
 <p><b>Use of public-sector incentives</b></p>	<p>Reduced indirect operating costs</p>	<p>China's "Made in China 2025" initiative plans to complete the construction of thousands of green factories by 2020 with financial support from the central government and financial institutes while also providing support for key projects in different regions, indicating that green manufacturing has become a future trend.</p>	<p>Our own goal of transformation to new industries, supplemented with financial support from local governments, helped to accelerate the Group's transformation processes. Additionally, we have formulated the "Action Plan for Evaluations of Green Factory Construction Projects" and are working to build and obtain certification for green factories. As of 2020, 19 of our legal entities have obtained the honorary title of "National Green Factory," and 1 legal entity obtained the honorary title of "National Green Supply Chain Management Corporation."</p>

**Greenhouse gas emissions**

**The Group's short-, mid-, and long-term goals**

**2016-2020 GHG and carbon reduction goal**



Carbon emissions per unit of revenue were reduced by **24%** in 2020 compared with the base year of 2015

**Established SBT 1.5°C carbon reduction goal**



We proposed a commercially ambitious **1.5°C carbon reduction** scenario and pledged to achieve zero emissions by 2050. We put forward our SBT carbon reduction commitment in 2021, and we expect this to be validated and approved by the Science Based Targets initiative (SBTi) by 2023.

**2050 net zero emission goal**









Achieve **net zero GHG emissions** across our value chain by 2050.

**Refine and allocate energy and carbon reduction targets to different business groups**

Formulate procedures for evaluating energy and carbon reduction management and implementation status in different business groups, and reward business groups with remarkable achievements in energy-saving measures. We conduct quarterly and annual comprehensive evaluations and implement regular reviews and revisions each year.

## Work plan for energy and carbon reduction measures

Key tasks	Description/requirements	Purpose/meaning
 <b>Implement energy-saving policies and regulations</b>	<p>We use governmental policies and regulations as a basis for mandatory tasks such as promoting energy and carbon reduction measures; coordinating management; implementing energy management plans; reporting energy usage; obtaining certification for energy management systems; establishing energy management centers; auditing energy usage; formulate energy-saving plans; compiling energy-saving self-assessments, and evaluating new, converted, and expanded energy-saving projects.</p>	<p>We respond to governmental laws and policies through supervisory and evaluation measures, which help to improve our credit ratings.</p>
 <b>Promotion of green manufacturing systems</b>	<p>We continue to implement our "Action Plan for Evaluations of Green Factory Construction Projects," promote the establishment of key factories and apply for national certifications relating to green factories, green supply chains, green campuses, and green products.</p>	<p>We have established green manufacturing management systems and applied for certifications to enhance our corporate brand image and obtain government funding and incentives.</p>
 <b>Diagnosis of industrial energy-saving measures</b>	<p>We diagnose main processes, key energy usage systems, key technologies, and equipment and promote technical consultations and technological transformations and upgrading.</p>	<p>Explore energy-saving potential and promote the implementation of energy-saving measures to reduce costs and enhance efficiency.</p>
 <b>Action plan for enhancing professional skills</b>	<p>We host training for professional skills, job skills, and new apprenticeships and organize training for entry-level workers, mid-level workers, senior-level workers, technicians, and senior technicians.</p>	<p>Enhance climate change awareness in employees and cultivate professional energy and carbon reduction talent.</p>
 <b>Full certification and audits of revised energy management systems</b>	<p>We encourage Group entities to implement updated ISO 50001:2018 systems and obtain verification to commence implementation of systematic energy and carbon reduction tasks.</p>	<p>Improve operations of energy management systems to ensure long-term implementation of energy management mechanisms.</p>
 <b>Execute key energy-saving projects</b>	<p>We focused on improving comprehensive efficiencies of magnetic suspension and air-conditioning units, application of advanced energy-saving electrical systems, promotion of radiative cooling materials, optimization of CNC oil mist purification systems, the transformation of systems for recycling and enhancing energy efficiency of waste heat from air compressors and boilers, and other energy-saving tasks through our energy management center.</p>	<p>Reduce energy waste, improve energy efficiency, achieve annual energy and carbon reduction targets, and complete government and Group evaluations of energy and carbon reduction targets.</p>

Most of the Group's carbon emissions stem from Scope 2 emissions. In order to achieve our climate change targets and maximize Group benefits, we continue to implement and obtain third-party verification for ISO 50001:2018 Energy Management Systems and ISO 14064-1 GHG Inventory. We also encourage and guide our suppliers in implementing and obtain third-party verification to identify energy and carbon reduction risks and opportunities within our entire value chain.

In accordance with the Work Plan for Controlling Greenhouse Gas Emission during the 13<sup>th</sup> Five-Year Plan Period in China, which requires carbon reduction goals of 18%, we formulated the goal of reducing carbon emissions by 24%. We formulated GHG and carbon reduction targets for 2016-2020. Our carbon emissions per unit of revenue for 2020 were reduced by 24% compared with the base year (2015). We have further adjusted our targets for each year. In consideration of impacts from the COVID-19 pandemic on Group revenues for 2020, we lowered our target to 23.14% and revised our annual target for 2020 to 4.27%. In 2020, our direct GHG emissions (Scope 1) were 152,602 tons CO<sub>2</sub>e, and indirect GHG emissions (Scope 2) were 5,265,000 tons CO<sub>2</sub>e. Carbon reductions for 2020 were 4.44%, and carbon emissions for the year were reduced by 23.27% compared with 2015, achieving the Group's intermediate climate goals. We will continue to strive for net zero GHG emissions across our value chain by 2050.

### Scope 1 and Scope 2 GHG emissions in 2020

Unit: tons CO<sub>2</sub>e

	Asia	South America	North America	Europe	Total
Scope 1	139,975	208	10,279	2,140	152,602
Scope 2	5,093,313	15,240	119,260	37,187	5,265,000
Total	5,233,288	15,448	129,539	39,327	5,417,602

### Scope 3 GHG emissions in 2020

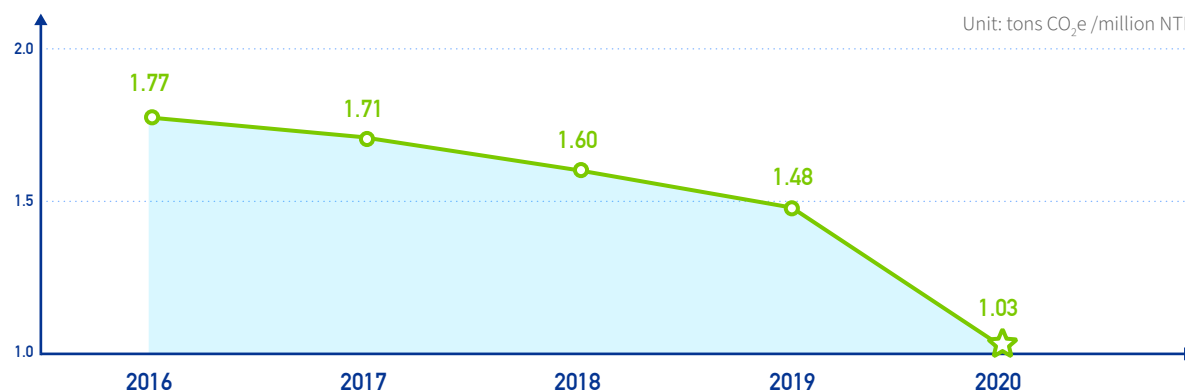
Unit: tons CO<sub>2</sub>e

		Total
Scope 3	Emissions from upstream transport and distribution for goods	102,140

- Notes:
1. Emissions factors for natural gas and heat were derived from China's "Guidelines for Accounting Methods and Reporting of Greenhouse Gas Emissions of Electronic Equipment Manufacturing Enterprises (Trial)"; emission factors for diesel and gasoline were taken from the UK's "2020 Government Greenhouse Gas Conversion Factors for Company Reporting"; emission factors for electricity used the electricity emission factor for China (0.6167kgCO<sub>2</sub>e/kWh) taken from the IEA Emission Factors 2020.
  2. The Global Warming Potential (GWP) used in the table was taken from the "IPCC Fourth Assessment Report (2017)."
  3. GHGs include carbon dioxide.
  4. We used the financial control criteria to compile GHG volumes.

### Carbon emissions per unit of revenue for 2016-2020

Unit: tons CO<sub>2</sub>e /million NTD



Notes: Carbon emissions per unit of revenue for 2016-2020 encompass Scope 1, Scope 2, and Scope 3 carbon emissions.

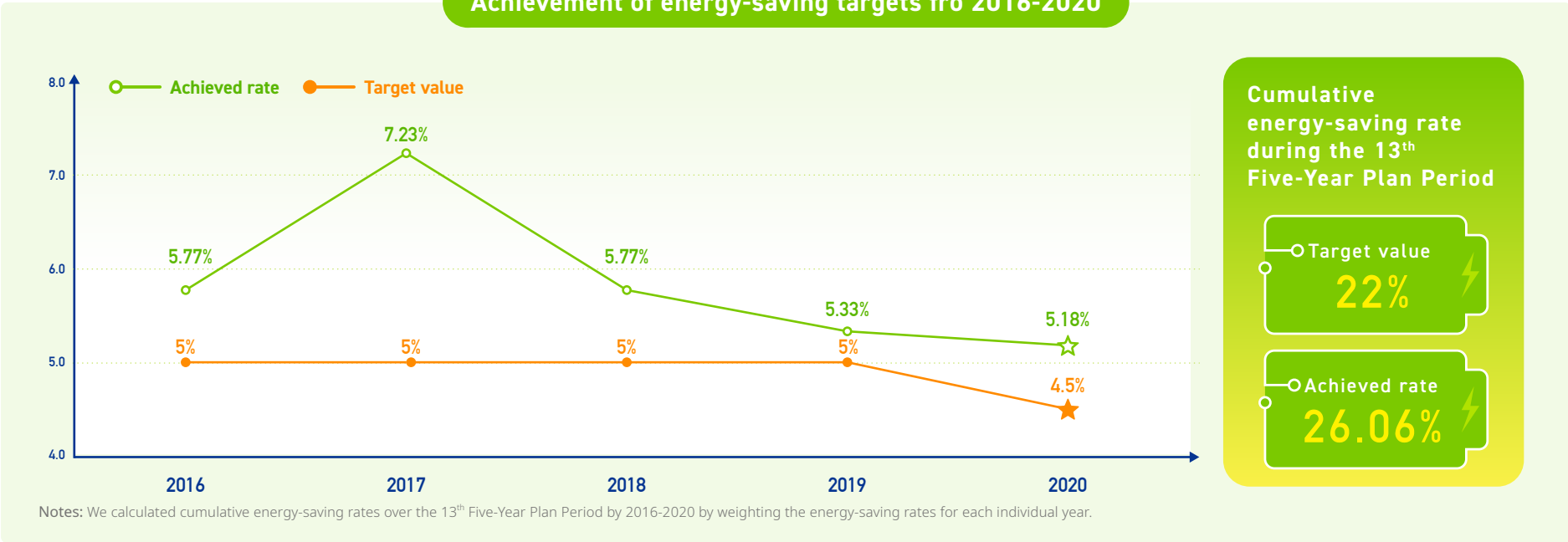


## Energy Management

We systematically manage our energy use through the implementation of the ISO 50001 Energy Management System and third-party verifications to identify risks and opportunities for reducing energy use and enhancing energy efficiencies. Additionally, the Group has formulated the “Audit Procedures for Energy-Saving Projects” and “Audit Procedures for Energy-Saving Management” for continued implementation and transformation of energy-saving technologies. We also conduct internal energy-saving audits at factories to enhance energy usage efficiency. Additionally, the Group is also actively developing new energy and carbon reduction technologies, products, and business models, exploring our energy-saving potential, and promoting transformation and upgrades to increase benefits. We ultimately hope to optimize our energy and carbon reduction systems for continuous improvement. Furthermore, in line with goals relating to global energy transformation and low-carbon economic development, we continue to increase installation capacity by installing and

purchasing rooftop- and ground-mounted solar stations. We also directly purchase other clean energies to raise our usage volumes and ratios of clean energy while reducing GHG emissions. Most of the Group's factories are concentrated in China. In order to meet the energy-saving goals of China's Work Plan for Controlling Greenhouse Gas Emission during the 13<sup>th</sup> Five-Year Plan Period, the Group has established a mid-to-long-term energy-saving goal: compared to the base year (2015), reduce energy consumption by 22% in 2020, equivalent to about 1,723 million kWh in energy-savings. At the beginning of each year, the Group formulates energy-saving goals for the said year and communicates these to our business subgroups. Incentive measures are also implemented to enhance the development of energy-saving technologies in each subgroup. The Group's energy-saving target for 2020 was 4.50%. The actual energy-saving rate was 5.18%, a reduction of 26.06% compared with the base year, successfully achieving the Group's mid- to long-term energy-saving goal.

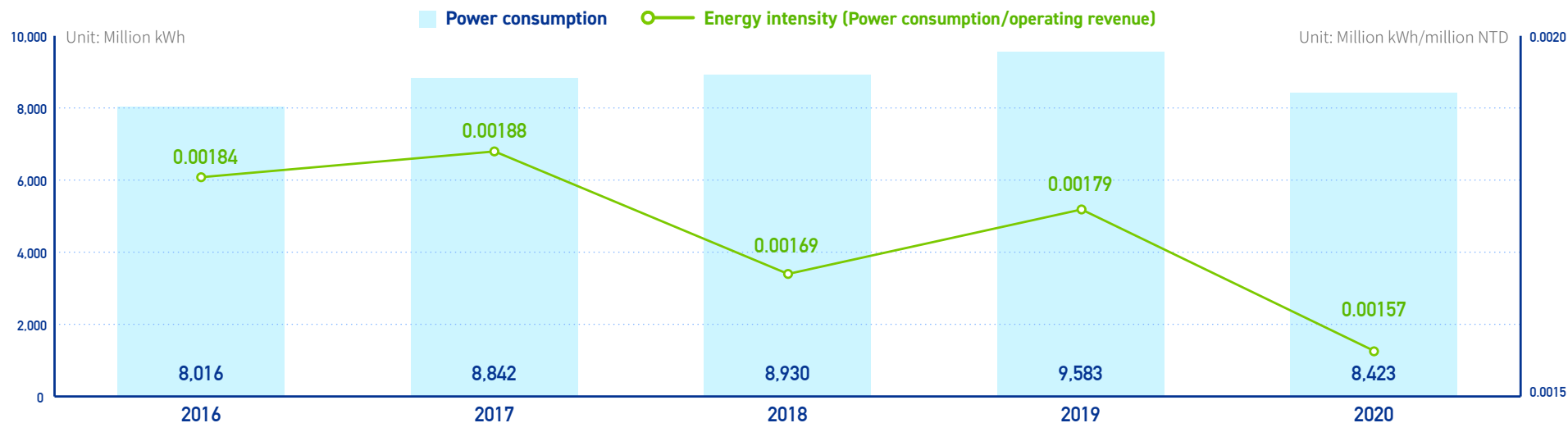
### Achievement of energy-saving targets fro 2016-2020



## Global energy consumption in 2020

	Purchased electricity		Fuel									Energy consumption
	Power consumption		Natural gas		Gasoline		Diesel		Steam		Heated water	GJ
	Million kWh	GJ	Thousand cubic meters	GJ	Tons	GJ	Tons	GJ	Tons	GJ	GJ	
Asia	8,173	29,423,348	62,943	2,452,992	315	13,568	34,891	1,489,752	601,238	2,265,104	431,199	36,075,963
South America	29	104,098	0	0	0	0	69	2,948	0	0	0	107,045
North America	173	622,329	3,471	135,285	20	871	901	38,486	2,716	10,232	112,915	920,118
Europe	48	173,434	795	30,968	78	3,345	66	2,817	0	0	67,971	278,536
<b>Total</b>	<b>8,423</b>	<b>30,323,209</b>	<b>67,209</b>	<b>2,619,245</b>	<b>413</b>	<b>17,784</b>	<b>35,927</b>	<b>1,534,003</b>	<b>603,954</b>	<b>2,275,336</b>	<b>612,085</b>	<b>37,381,662</b>
Notes	1. Electricity heating value is calculated as 860 kcal/kWh 2. Natural gas heating value is calculated as 9,310 kcal/cubic meters 3. Gasoline heating value is calculated as 10,300 kcal/kg			4. Diesel heating value is calculated as 10,200 kcal/kg 5. Liquefied petroleum gas heating value is calculated as 12,000 kcal/kg 6. Steam heating value is calculated as 900Mcal/t			7. The above heating values are taken from the Chinese national standards ("General Principles for Calculation of Comprehensive Energy Consumption"; GB/T2589-2008)					

## Electricity usage in 2016-2020

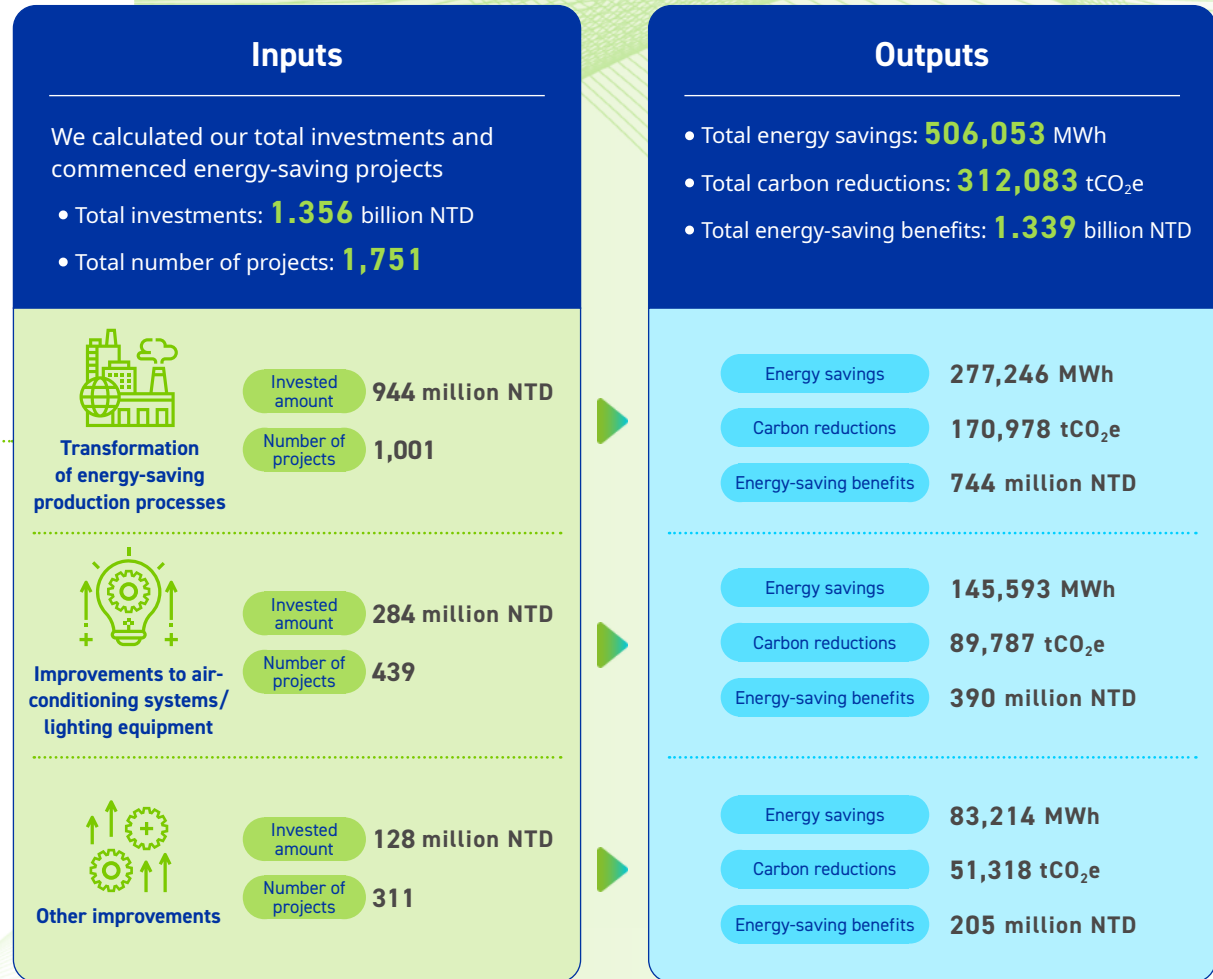


## Energy-Saving Technological Transformations

In 2020, we invested 1.356 billion NTD in 1,751 energy-saving projects encompassing transformation of energy-saving production processes, improvement of air-conditioning systems/lighting equipment, and other improvements. Total energy savings were 506 million kWh, equal to total carbon reductions of 312,083 tCO<sub>2</sub>e, and energy-saving benefits were equivalent to 1.339 billion NTD.

## Energy Reduction Audits

For effective implementation of energy and carbon reduction projects, the Group reviews actual performance and benefits, and our Energy Resource Management Committees conduct annual audits and review all projects to the achievement of energy and carbon reduction goals. In 2020, the Group found 1,551 projects in violation of regulatory requirements, mainly for the following three types of equipment: air compressors, air-conditioners, and lighting systems. We have completed 100% of all improvement measures, reduced power wastage by 167,000 kWh, and decreased expenditures by 41.10 million NTD.



## Energy-Saving Incentive Mechanisms

To enhance employee emphasis on climate change and internalize relevant concepts into the core cultures of each department, the Group formulates “Appraisal Items and Scoring Guidelines for Energy Management” each year. Appraisal items include energy management, energy reduction systems, implementation of energy-saving measures, supervision of energy reduction measures, and energy-saving KPIs. Detailed quantitative scores are presented for each item, and those ranking within the top 3 for the quarter/year or other teams that obtained high scores are awarded bonuses and incentives. We provide group and individual cash rewards for outstanding energy-saving technological transformation projects that enhance energy efficiency. In 2020, we awarded 3.47 million NTD to 11 teams and 6 individuals with outstanding energy-saving contributions.

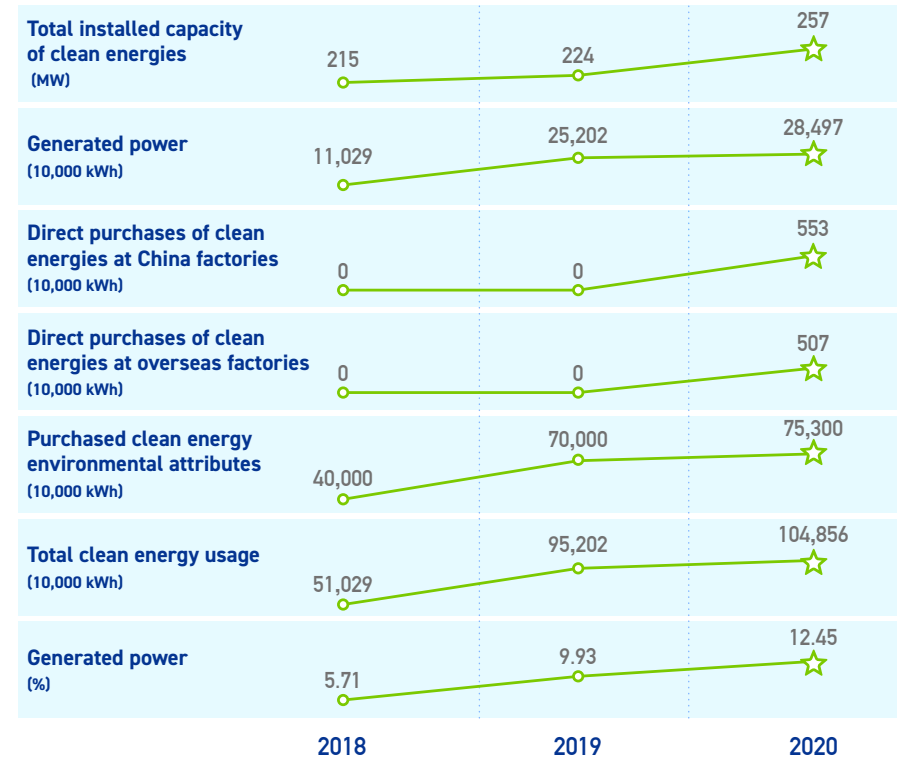
Unit: NTD



## Development and Usage of Clean Energy

Clean energy has become one of the most important international issues, and governments from all countries have formulated clean energy usage targets to reduce the usage of high-pollution fuels and make strides toward low-carbon energy structures. As a leader in the electronics industry, the Group has a duty to promote low-carbon developments. Therefore, the Group is actively increasing installation capacity by installing and purchasing rooftop- and ground-mounted solar stations while also directly purchasing other clean energies. In 2020, the Group achieved a total installed capacity of 257MW and generated 28,497 million kWh per year. Our overseas factories purchased 5.07 million kWh of clean energy. Additionally, our factories in China directly purchased environmental attributes equivalent to 753 million kWh. Our usage of clean energies reached 1,048.56 million kWh, and clean energy usage ratios were 12.45%.

### Clean energy usage for 2018-2020



# Environmental Management System



We have given priority to environmental protection principles since our establishment. The Group has implemented and completed verification of ISO 14001 Environmental Management Systems at all its factories starting from the construction phases, and we also use the “Plan, Do, Check, and Action (P-D-C-A) model” to promote continuous improvements. We confirmed environmental considerations arising from our production processes, activities, and services; assessed all environmental considerations and their impacts on the environment; and compared their severity and other factors through comprehensive evaluations to ensure prior identification of major potential factors, then formulated improved measures and operating processes that reduced and prevented the impacts from these factors. Additionally, we simultaneously operate environmental treatment facilities and factory production processes to ensure that our wastewater, exhaust emissions, and waste materials comply with local regulatory requirements. We incurred no major environmental protection violations in 2020.

To realize our low-carbon and green manufacturing targets, we gradually implemented green factory and green supply chain management measures into our operational locations in accordance with China's green manufacturing standards. We conducted self-evaluations to facilitate continued optimization and improvement. Following on-site evaluations by third-party institutes and government evaluations, **19 of our legal entities have obtained the honorary title of “National Green Factory,” and 1 legal entity obtained the honorary title of “National Green Supply Chain Management Corporation.”**

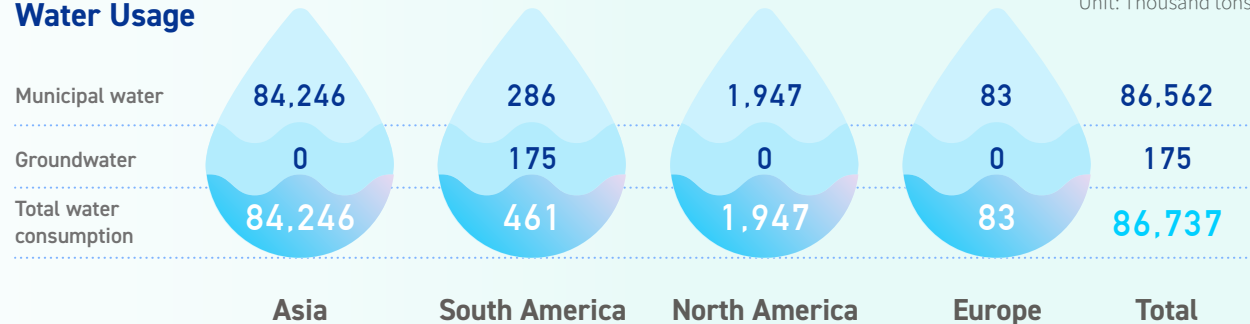
## Water Management

Municipal water is the main water source used in all our factories. We do not impact surrounding water sources. Our factories conduct reviews of water-saving plans and water facilities each year to reduce water consumption. Additionally, we actively promote recycling and reuse of water resources and have incorporated renewable/biodegradable components into our production materials to effectively reduce environmental impacts of production processes.

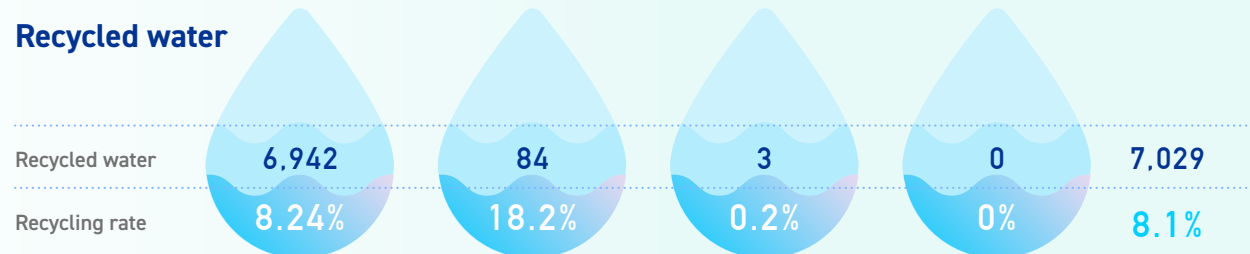
We expect to carry out comprehensive water management plans at our factories in China in 2021. Following identification of water resource risks, we began promoting various water-saving measures and reducing the discharge of standard wastewater to achieve our goals relating to the effective usage of water resources, reduced wastewater discharge and decreased environmental impacts.

### Water Usage

Unit: Thousand tons



### Recycled water



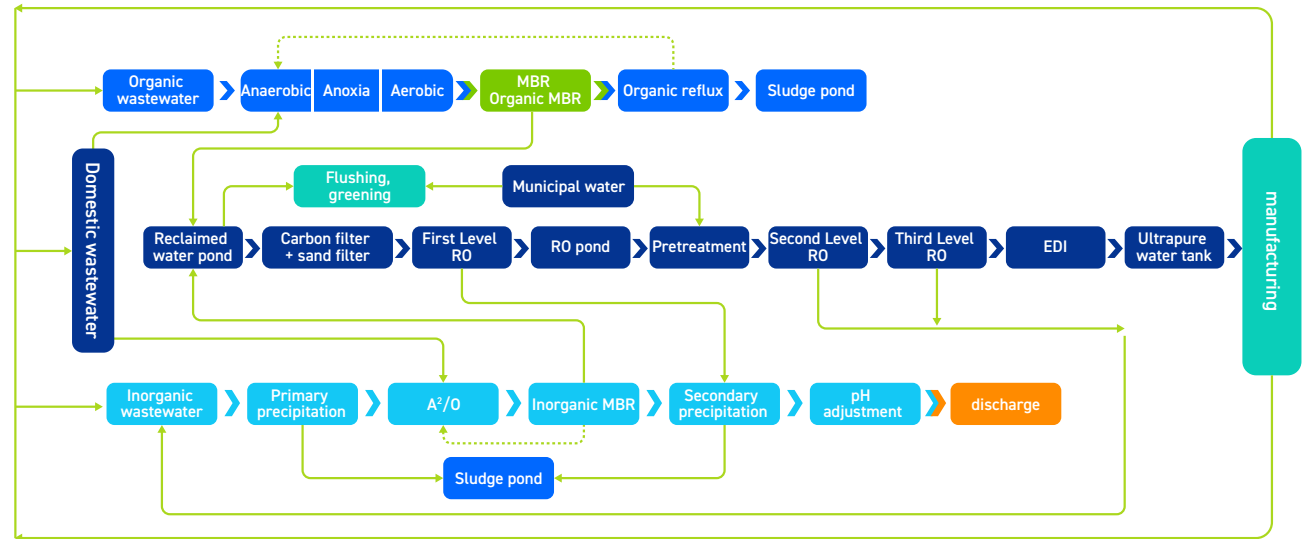
## Wastewater Management

The Group works to optimize production processes to reduce water consumption at the source. We also actively implement wastewater recycling procedures and reuse treated domestic wastewater in production processes and environmental greening, greatly reducing our impact on external environments. Additionally, to ensure that our wastewater does not cause environmental pollution, all factories have wastewater treatment facilities that are regularly inspected and maintained by dedicated personnel. Discharged wastewater complies with sewage standards and is periodically inspected by qualified external institutes. No environmental pollution incidents occurred in 2020.

	Asia	South America	North America	Europe	Total
Domestic wastewater	67,396	369	1,558	66	69,389
Industrial wastewater	12,273	-	-	-	12,273
Total wastewater discharge	79,669	369	1,558	66	81,662

Unit: Thousand tons

### Water reuse system



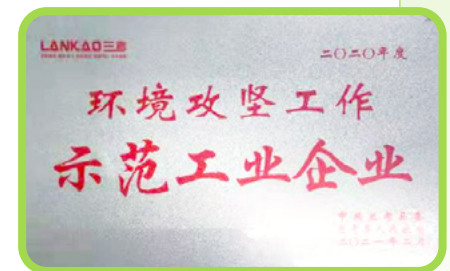
### Wastewater management case from our Longhua Factory

We established 5 wastewater treatment plants at our Longhua Factory. We process industrial wastewater using physical precipitation, chemical precipitation, and oxidation-reduction treatments to reduce pollutants and monitor water quality during all processes to confirm pH values, COD, ammonia nitrogen levels, phosphorus levels, and heavy metal levels. Our domestic wastewater is treated with A2O (anaerobic-anoxic-oxic) processes paired with membrane filtration processes. Effectively treated wastewater is tested to ensure that it complies with relevant standards before it is reused or discharged through municipal pipelines. We expect to launch an environmental monitoring platform at our Longhua Factory in 2021. The platform will be used for real-time monitoring of wastewater treatment processes and help us increase our wastewater usage and reduce discharge volumes through quantitative management and analysis.

### Wastewater management case from our Lankao Factory

The Group conducted risk identification for water resources at all our operational locations in China and discovered our Lankao Factory was situated in an area with severe water scarcity; the local government had issued the "Action Plan for Water Conservation in Lankao County" to promote industrial water conservation efforts, increased efficiency in high water-consuming industries, and active efforts in cascade usage of recycled water for the establishment of ten water conservation benchmarking enterprises by 2023.

In order to comply with national water conservation policies and establish a corporate image associated with green environment benchmarks, we implemented a wastewater recycling system at our Lankao Factory. We recycled 62.28% of consumed water in 2020, generating approximately 19.81 million NTD. In the future, we plan to implement smart systems for intelligent remote monitoring, report analysis, early warning, and risk prevention, and parameter adjustments, making it our goal to obtain AWS International Water Stewardship Standard certification.



# Waste Management

Since the industrial age, large amounts of solid waste have been generated due to the needs of manufacturing processes and private individuals. Waste that is not properly disposed of can enter the soil, water sources, and the air; cause pollution to the environment; and produce large amounts of waste that take a long time to decompose, affecting future generations. Waste has become an environmental issue of increasing importance. Because of this, the Group has implemented “zero waste” policies at all key factories in China to gradually reduce amounts of incinerated and landfill waste, ensuring compliance with maximum limits of 100% waste conversion rates and 10% incineration rates. Our “zero waste” policies have become one of our most important strategies. These policies minimize generated waste through source reduction of raw materials; the Group is also actively engaged in recycling and reuse of inner and outer packaging materials, which enhance waste recycling and reuse rates. All our factories have waste management units that are responsible for routine management of various waste materials, a compilation of data, and supporting other units in implementing waste reduction and recycling tasks.

To ensure that all waste is legally and effectively disposed of, all factories comply with internal waste management procedures to secure bids for waste handling. The legal qualifications of waste disposal companies are reviewed according to open, fair, and impartial principles. We use the above procedures to screen and select waste management vendors with the lowest level of risk to conduct appropriate waste disposal and recordkeeping. The Group periodically audits waste disposal vendors to ensure that our waste is handled in compliance with regulatory requirements.

## Establish zero waste factories to strengthen environmental management for our supply chains and clients



The Group signed a memorandum of cooperation with UL, a global safety certification company, in January 2021 to make our Shenzhen Longhua Factory a “zero waste” demonstration site. Waste is managed through digital cloud technologies, which make it possible to track waste volumes and conversion rates in real-time. Our quantitative system is used to implement waste reduction targets and track improvements; we are gradually expanding the scope of the system to encompass the entire Group to realize our “zero-waste factories” goal, build upon our philosophy of “sustainable management=EPS+ESG,” and set an example for the industry.

To ensure that our products and the products of our clients meet the highest environmental specifications, we included our supplier partners in this memorandum of cooperation. Our central procurement and supply chain management departments have already convened suppliers for systematic training based on the framework laid out in this memorandum of cooperation to enhance their professional skills and technologies as we make strides toward our “zero-waste factories” goal.

Following the implementation of our system, we established different “zero waste targets” based on product manufacturing processes. We firstly required all units and entities with assembly processes to achieve 90% conversion standards within the first year. This target will be gradually increased and implemented for different manufacturing processes at our other entities. In the future, we will continue to execute more green production and smart manufacturing projects, as well as other projects related to environmental protection. We invite participation from our supply chain partners, clients, and employee so we can gradually build our green manufacturing capabilities and create momentum for our next stage of growth.

# Chemicals Management

We strive to purchase and use materials with low environmental and human impacts in compliance with governmental laws and policies, standards and regulations of international organizations and conventions, and client regulations, as well as to ensure environmental protection and personnel safety. We have established a chemicals and hazardous substances

management system to assess and track our usage of chemicals, thus achieving unified, standardized, and regulated management as we fulfill our commitments to green products and our CSR.

## Procurement



The Group tracks the safety of chemicals and hazardous substances starting from the source. In compliance with regulatory requirements, we rigorously review supplier qualification documents, including government-issued chemical production licenses, transportation licenses, and qualifications of transportation personnel. We also require our suppliers to provide true and accurate technical safety manuals and other safety information, as well as chemical mass spectrometry reports. We immediately cease procurement from suppliers found to be unqualified.

## Storage, transportation, and use



We use safety data sheets (SDS) to determine hazard levels of chemicals and comply with storage regulations following isolation, division, and separation. Hazardous chemicals used on site are stored in dedicated chemical cabinets. Safety measures are implemented for all storage facilities, including the establishment of adequate firefighting equipment, safety signs, preventive measures for fires and explosions, and preventive measures for leakages. We strive to ensure chemical storage safety through multiple layers of inspections, including daily spot checks, professional inspections, and random inspections from government and supervisory institutes. Vehicles transporting chemicals must be manned by drivers with government-issued operating qualifications and must be accompanied by personnel familiar with chemical properties and safety measures to prevent combustion, explosion, and poisoning incidents from occurring during transport.

Additionally, safety assessment processes (including assessments of impacts from environmental pollution and hazards to humans) are activated for all new and alternative chemicals used within the Group. Relevant units submit applications to the environmental, fire, and industrial safety departments for recordkeeping and can commence usage of chemicals once they have passed assessments from our environmental, fire, and industrial safety departments.

## Training and drills



To ensure the management of chemical safety, all chemical management personnel have to pass training and obtain relevant qualifications before they can begin work. Relevant personnel undergo retraining each year and are required to undergo reassessments once their qualification documents have expired. To prevent emergency chemical incidents, the chemical management units at all factories conduct at least one emergency drill every six months to ensure rapid responses and enhance safety awareness.

## Waste disposal



To ensure that our chemicals do not cause environmental or human damage, we rigorously control disposal processes for chemical waste. Recycling and reuse potential, as well as risks from waste storage and disposal, are considered starting from the procurement stages. We entrust waste disposal processes to qualified companies and audit their recordkeeping, on-site equipment, and processes for hazardous waste every six months, thus ensuring that disposal procedures comply with legal and requirements.





In 2020, our factories in China procured 106,556 tons of chemicals. In accordance with the REACH SVHC List (211 items); RoHS-EU & RoHS-CN (10 substances); the Stockholm Convention on Persistent Organic Pollutants; the Minamata Convention on Mercury; the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade; Announcement of the Ministry of Ecology and Environment, the Ministry of Commerce, and the General Administration of Customs on Issuing the Catalog of Toxic Chemicals Strictly Restricted in China (2020) (8 substances); and catalogs of prohibited, restricted, and controlled hazardous chemicals issued by local provinces/cities, we identified 14 hazardous substances which were incorporated into our improvement action plan for 2021. We plan to reduce and replace these substances to enhance the management performance of hazardous substances. Additionally, in 2021, we established a task force responsible for formulating hazardous substances management policies and establishing a comprehensive process management program for adding/using/revising hazardous substances. The Group systematically controls chemical procurement, usage, and management. We also regulate green, healthy, safety, and environmental management requirements of chemical procurement processes not specified in our “Specification for Hazardous Substances and Materials Management” as part of our efforts to reduce and eliminate the use of hazardous substances; reduce impacts on the environment and human health; and establish unified, standardized, and regulated management of hazardous substances.

## Proactive Chemical Management

We have gradually eliminated certain chemical substances from our manufacturing processes and use the GreenScreen® framework and US EPA Safer Choice Program to assess alternative substances. We replaced all hazardous substances (GreenScreen® Benchmark 1 and 2) used during our final production processes with environmentally friendly alternatives.

We have shifted our focus to the safety of chemicals from our upstream suppliers, shared our experiences with the industry, and joined the IPC team to provide suggestions for the formulation of electronics industry usage standards. We hope that sharing our best practices can promote collaboration within the ICT industry and facilitate the wider use of green chemicals.

