

# 3

## Commitment to Environmental Sustainability



3.1 Environmental Management  
Responsibility

3.2 Climate Change and Energy Management

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3.5 Packaging Materials Management

# Commitment to Environmental Sustainability

## 3.1 Environmental Management Responsibility



### Material Topic

Impact on the operating environment and regulatory compliance



### Policy and Commitment

Develop environmental management policies covering six aspects of “Legal Compliance, Pollution Prevention, Green Procurement, Performance Management, Communication Mechanism, and Continuous Improvement” as the highest guidelines of environmental management



### Goal

Develop annual management goals based on the management projects concerning energy conservation, carbon reduction, waste reduction, and wastewater discharge reduction to minimize their impact on the operating environment  
(For goal achievements, please refer to the Uni-President’s 2020 Sustainable Governance Implementation Performance)



### Responsibility and Resource

- There is an EHS (environment, health and safety) team in place at each production plant, whose responsibility is to ensure correct implementation of the plant’s internal environmental management system
- A cross-departmental management team is set up by each production plant to tackle energy and water resources on a project-by-project basis
- In 2020, NT\$440.15 million was invested in environmental protection matters



### Action Plan

- Introduce ISO 14001 and make all documents and operating processes subject to verification by a third-party certification unit on a regular basis
- Perform greenhouse gas (GHG) inventory in accordance with the ISO 14064-1 inventory process
- Build a green procurement system and prioritize the purchasing of green products in the procurement policy
- Establish a Group Green Energy Management Center to collectively plan the promotion of green energy related projects within Uni-President and its respective affiliates
- The EHS team of each production plant follows up and updates changes in environmental regulatory requirements in Taiwan and makes response plans
- Form a project management team for energy and water resource issues to regularly conduct risk evaluations on issues and propose emergency response plans
- Introduce energy conservation, carbon reduction, water saving and waste recovery projects in each plant to reduce environmental impact



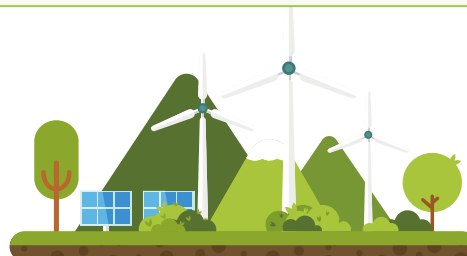
### Evaluation Mechanism

- Continue to maintain the effectiveness of the ISO 14001 management system
- Comply with environmental laws and regulations
- Review the annual achievement rate for energy conservation, carbon reduction, waste reduction, and wastewater management goals



### Grievance Mechanism

- Establish environmental communication and management processes, and make the Administrative Service Department and the Environmental Protection Team responsible for internal and external communication affairs. Stakeholders may report environment related matters via the contact number of each production plant. As the plant receives the relevant information, the communication management process will be initiated to handle the issue according to the type of the issue



 <p>Material Topic</p>	<p>Packaging Material Management</p>
 <p>Policy and Commitment</p>	<p>Introduce and develop optimal environmentally friendly and functional packaging materials; proactively promote lightweight packaging materials while reducing the use of plastic</p>
 <p>Goal</p>	<p>Use environmentally friendly materials and packaging material reduction</p>
 <p>Responsibility and Resource</p>	<ul style="list-style-type: none"> <li>• The Packaging Material Technology Team formed by the Central Research Institute promotes optimal development of product packaging materials</li> </ul>
 <p>Action Plan</p>	<ul style="list-style-type: none"> <li>• Introduce FSC paper packaging material to carton products, while continuing to assess the feasibility of expanding the production lines</li> <li>• Continue to work with external parties in the research and development of plastic decomposition-related technologies; communicate with consumers to get an understanding of their needs, while working closely with suppliers to introduce the most sustainable, environmentally friendly and functional packaging materials</li> </ul>
 <p>Evaluation Mechanism</p>	<ul style="list-style-type: none"> <li>• Project for plastic reduction in product packaging materials</li> <li>• Decrease in product waste disposal fees</li> </ul>
 <p>Grievance Mechanism</p>	<ul style="list-style-type: none"> <li>• The Consumer Service Center receives comments from our consumers via multiple channels (0800 hotline, official website, service mailbox, retail feedback). For those who call us, we vow to return the call within one hour and aim to close a general customer complaint case within 24 hours. We provide consumers with product consulting and services, while collecting the views and opinions of customers regarding the use of products and submitting the feedback to the Packaging Technology Team. Constructive suggestions will be transformed into practical actions on reducing packaging materials and plastic through systematic management</li> </ul>

### ◀ 3.1.1 Environmental Management Mechanism ▶

At Uni-President, we adopt a group management approach, taking into account the development trends of international environmental issues and the direction of Taiwan's environmental policies, while combining key issues faced by Uni-President and each of our affiliated company. Our environmental management is based on the ISO 14001 environmental management system, and we entrust a third-party verification company to conduct an inspection on documents and operating procedures to ensure correct implementation of the plant's internal environmental management system. For environmental risks that require proactive management, we have set up management teams for project management on matters related to climate change, energy and water resources.

Uni-President has formulated six major aspects of the environmental management policies as the highest principle guiding environmental management. Currently, all general plants in Taiwan have passed the new environmental management system ISO 14001 :2015 certification. Moreover, each general plant has set further annual targets and management plans as the company's priorities in order to continuously improve environmental management performance.

## Uni-President Environmental Management Policies

**Regulatory Compliance**

- Follow the environmental protection regulations of the government and the concerns of the stakeholders
- The heads at all levels shall take supervision

**Pollution Prevention**

- Implement source management right at the product development stage to mitigate ecological and environmental impact
- Establish an environmental management system and implement greenhouse gases inventory

**Green Procurement**

- Establish a green procurement mechanism
- Purchase green ingredients/materials in priority

**Performance Management**

- Establish environmental protection and improvement goals and implement performance management
- Disclose performance management status on a regular basis

**Communication Mechanism**

- Establish communication and consultation channels to facilitate delivery and understanding of information
- Disclose environment-related information outward and make improvements with reference to the opinions of the stakeholders

**Continual Improvement**

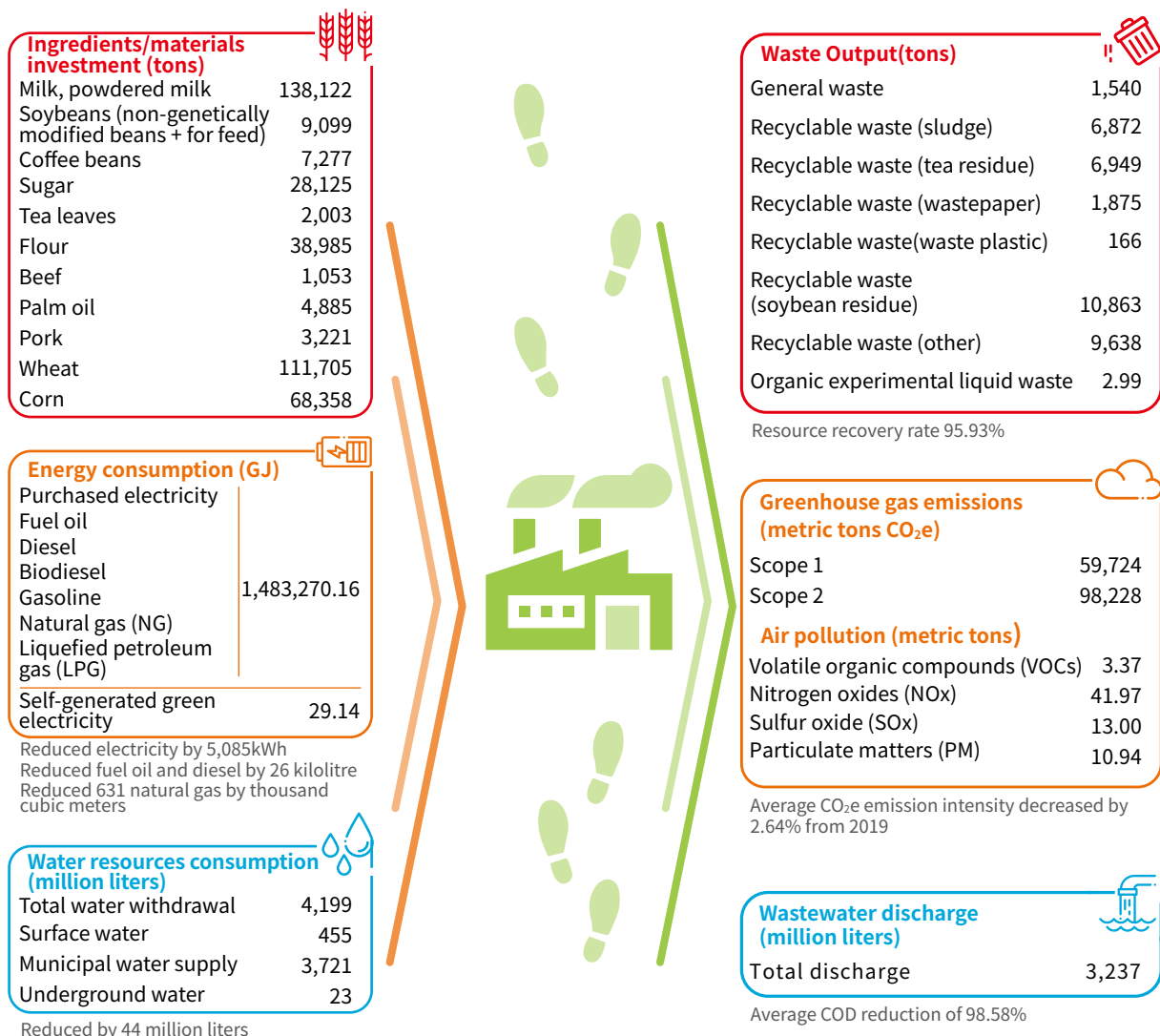
- Organize educational training continuously to enhance environmental protection awareness among employees
- Enhance the environmental protection system and regulations and implement systematic management



## Main targets, subjects and introduction programs for ISO 14001 in 2020

Management Goal	Introduction Program	Annual Management Achievement
 Enhancement of environmental protection awareness	Conducted environmental and general training and education	80 employees – hours/year
	Released environment and safety messages and promotion	12 sessions/year
 Regulatory compliance	To meet boiler emission standards, heavy fuel oil was replaced by natural gas fuel	Completed in June 2021
	Implementation of internal three-level auditing of environmental protection parameters	A total of 70 deficiencies were identified with respect to issues regarding air pollution, drinking water, toxic chemicals, wastewater, and waste; these issues have been addressed by all plants
 Improvement of the operating environment	Improvement of wastewater treatment plant and perimeter odor	Perimeter odor detection value was below 50
	Arrangement of the perimeter odor and noise inspection	Once a week
	Strengthen leak prevention functions of the pharmaceutical area of the wastewater plant	Improved the spill prevention function of the chemical storage area
 Reduction of wastewater/waste	Optimizing the cleaning time of finished barrels in sterilization area	Saved 546 tons of water/year
	Improvement of process at the dosing area	
	Food plant packaging bag reuse	Saved 16.5 tons of garbage removal volume/year
	Oil extractor control optimization	Recovered 650kg of oil/day
 Reduction of energy consumption	Improvement of wastewater plant energy conservation	<ul style="list-style-type: none"> <li>Save 734,799 kWh/year</li> <li>Reduced steam use in the process by 500 tons per year</li> <li>Reduced electricity consumption per ton of wastewater treated at Zhongli wastewater treatment plant by 2.5%</li> </ul>
	Improvement of energy saving for electricity linkage at the dairy manufacturing plant	
	Improvement of energy saving for air compressor systems, pumping motors and ice water mainframes	
	Replacement of evaporator of finished product warehouse	
	Replacement of freezer units	
	Optimization of energy use in the hot water for tea making	

## 2020 Uni-President Environmental Footprint



### 3.1.2 Green Procurement

As green procurement is an essential part of the environmental management policy, at Uni-President, we have established a green procurement mechanism, and it clearly states in the procurement policy that we must prioritize the procurement of green products. At the same time, we also put a huge emphasis on environmental protection, energy conservation and carbon reduction of the supply chain, in the hope of gradually reducing the environmental impacts caused by our operations. Since 2013, and for seven consecutive years, Uni-President has been awarded the Private Enterprise Green Procurement Excellence Award by the Environmental Protection Administration of the Executive Yuan. Our total green procurement amounts totaled NT\$1.16 billion in 2020.

### 3.1.3 Environmental Protection Expenditure

In 2020, our environmental invest amounted to NT\$440.15 million, up NT\$63.50 million from 2019. This was primarily due to the increase of environmental equipment and treatment expenses for sludge and container removal. As a means to increase the reuse rate of resources in our plants, we proactively replaced old equipment and invested in environmentally friendly equipment in 2020, including a newly installed sludge dryer and replacement of dewatering machines and boilers. By doing this, we are able to reduce the environmental impact from our production activities. As the price of sludge treatment increased by NT\$6.05 thousand per ton, removal and disposal expenses have increased compared to last year. Also, the production of plastic bottles (PET, PP, PE) for tea drinks, milk drinks and the water business group increased this year, the removal and disposal expenses for container recycling also increased compared to 2019.

## 3.2 Climate Change and Energy Management

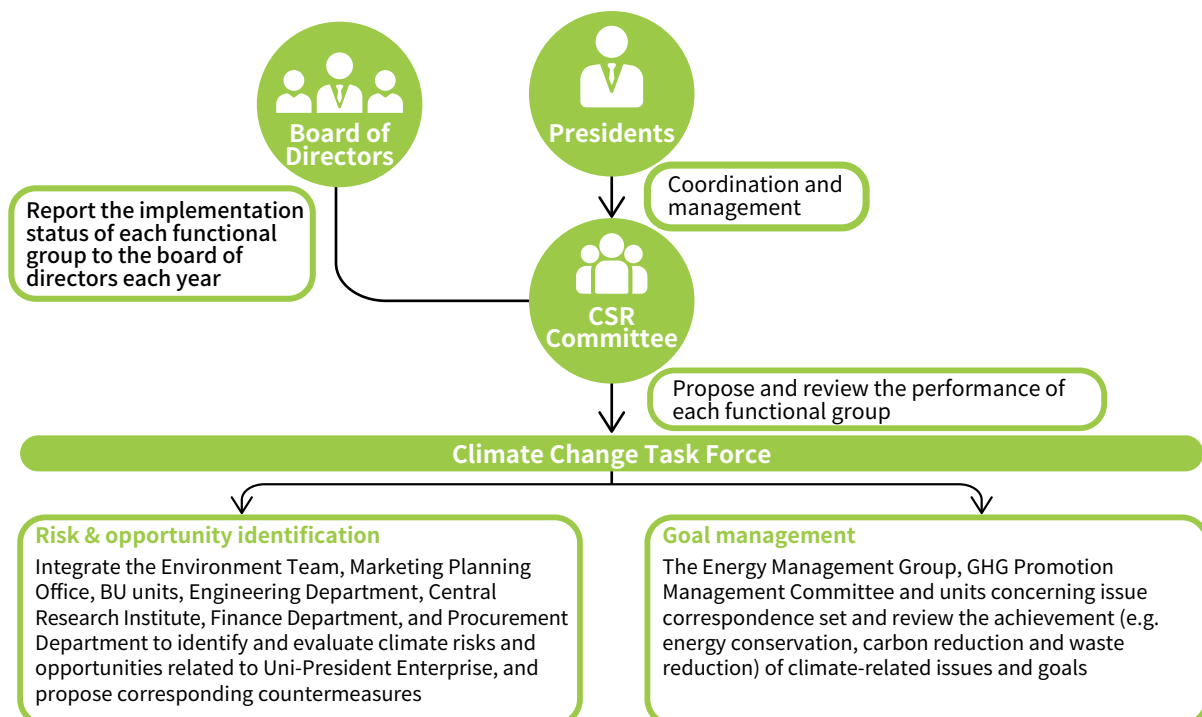
Many climate-related natural disasters have occurred in recent years, including the forest fires in California, Yangtze River floods in China, and the Kyshu floods in Japan. Not only have these natural disasters caused operational losses for many companies, they also directly affect the daily lives and properties of many people. According to the Global Risks Report released in 2021 by the World Economic Forum (WEF), “extreme weather,” “climate action failure,” “human damage to the environment” are once again the most urgent risk issues facing the world this year. Among these issues, extreme weather is one of the risks with the highest probability of occurrence for five consecutive years. It goes without saying that actions must be taken to tackle climate changes issues.

As a responsible enterprise, we know we cannot step aside when faced with climate change risks and challenges. In the past, not only have we done our utmost to save energy and reduce carbon in our plants, to reinforce our climate risk control mechanism, we adopted the disclosure and management framework prescribed in the task force on climate-related financial disclosures (TCFD) in 2020. This assess and reviews the impact posed by climate change, which enables us to develop short-, medium- and long-term governance strategies for climate changes issues in order to respond to the impact brought by climate change.

### 3.2.1 Climate Risk Governance

At present, the governance framework for climate change issues is coordinated by our presidents, who also oversee the CSR Committee’s control over related issues. There are several working groups under the CSR Committee for management of issues and evaluation of impacts. Furthermore, the Committee reports the implementation status of each functional group to the board of directors each year. As a means to strengthen our risk assessment on climate change issues, we have formed a climate change taskforce consisting of the Marketing and Planning Office, Environmental Team, BU units, Engineering Department, Central Research Institute, Finance Planning Department, and Procurement Department. The overall climate change risks and opportunity evaluation are carried out based on the business jurisdiction and operational development situation of each unit. By increasing our understanding on key climate risks and opportunity issues, we are able to develop suitable countermeasure and strategies, in the hope to mitigate the impact on our operations brought by climate issues, elevating our operational resilience when it comes to climate-related issues.

#### Uni-President Climate Change Risk Governance Framework



Note : BU units include Dairy and Beverage Group, Baking Business Group, Provisions Group, General Foods Group, and Instant Food Group

### 3.2.2 Climate Risk and Opportunity Evaluation

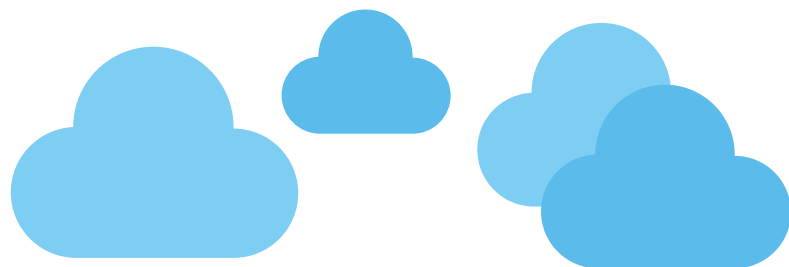
Through three phases, we have compiled and centered on seven major climate risks and opportunities to better understand climate change impacts on company business, strategy and financial planning.



#### 1. Collection of climate-related risks and issues in the food manufacturing industry

We collect and compile climate change risks and opportunity issues of concern to the food manufacturing industry with reference to CDP surveys, CSR reports, annual reports and third-party studies for domestic and foreign food manufacturing industries. Overall, we have summarized 12 risks and 9 opportunities based on the perspectives of transformation risks, physical risks and climate opportunities.

Type	Item	No. of issues		
Transition risk	Policy and Legal risk	3	A total of 12 risks	
	Market risk	2		
	Technology risk	1		
	Reputation risk	2		
Physical risks	Acute risk	1		
	Chronic risk	3		
Climate opportunities	Resource efficiency	2		A total of 9 opportunities
	Market	1		
	Energy source	2		
	Products and service	3		
	Resilience	1		

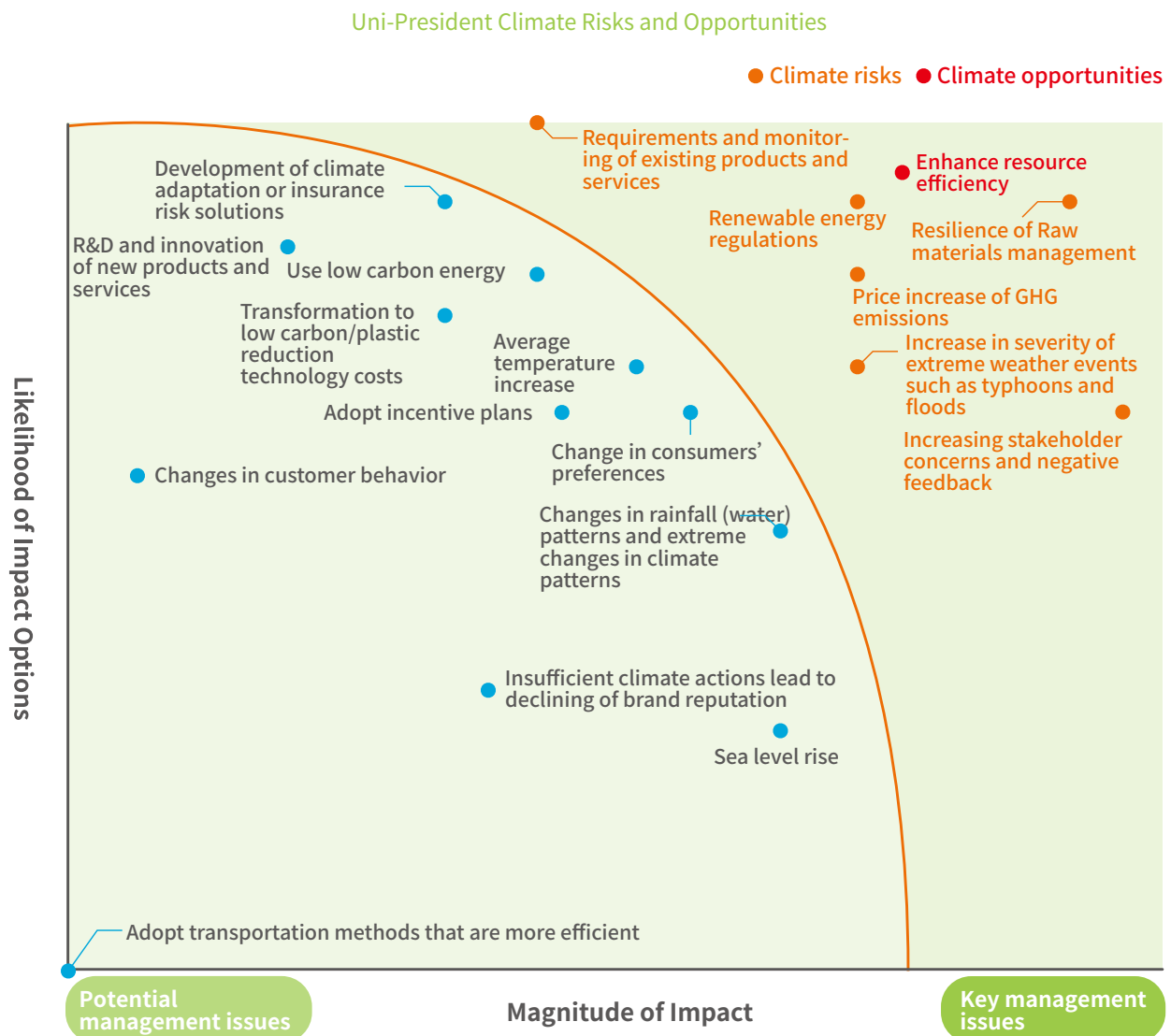


## 2.Uni-President Climate-related Risk and Opportunity Inventory

According to the results of the issues mentioned above, we conducted a survey and asked each department to evaluate and measure significant impacts of climate change risk and opportunity issues based on their duties. Through the survey, we were able to evaluate the probability of impact, the level of impact (covering evaluation indicators for financial affairs, production and products, employees and reputation). The possible impacts were evaluated based on time intervals : less than three years (short-term), between three and five years (medium-term), and more than five years (long-term). By doing this, we can complete the analysis of the operational significance of climate change risks and opportunities of Uni-President.

## 3.Confirmation of Uni-President's Key Climate Risks and Opportunities

Based on the results of each department's survey, we put the significance of issues in order, then confirmed seven key management issues from the perspectives of Uni-president's overall operational development and strategy planning. These seven issues are used for in-depth evaluation and formulation of strategic management issues.





### 3.2.3 Response and Management of Key Climate Risk and Opportunity Issues

Climate risks and opportunities	Potential impact to Uni-President	Time interval
<p><b>Physical risks</b></p> <p>Increase of severity of extreme weather events such as typhoons, floods and droughts</p>	<p>Faced with increasing probability of extreme weather events, our supply chain for raw materials may lead to disruption, or we may need to increase the number of days for storage of raw materials and products due to droughts or water scarcity. In addition, extreme weathers may cause damage to our plant equipment, raw materials or products, and road disruptions may result in difficulties in transporting raw materials or power or water outages, which may affect the production.</p>	<p>Short term (less than three years)</p>
<p><b>Transition risk</b></p> <p>Requirements and monitoring of existing products and services</p>	<p>As there is growing emphasis on sustainable products, we may begin to impose related regulations on products, or require reducing plastic used for packaging and product carbon footprint investigation. If our products are not labeled in accordance with related regulations, fines may be imposed due to violation, while the plastic reduction plan for product packaging and carbon management tool introduction will increase our R&amp;D and product carbon management costs.</p>	<p>Mid term (three to five years)</p>
<p><b>Transition risk</b></p> <p>Climate-related policy</p>	<p>In response to the global GHG management requirements, the government has prescribed renewable energy regulations. These regulations require large energy users to set up a certain percentage of renewable energy through means including purchasing of renewable energy power or certificates, energy storage equipment, or by paying an allowance. Moreover, in a bid to increase the use of renewable energy in the plant, it is possible that carbon fees will be imposed in the future in Taiwan. Meanwhile, many countries around the world have begun to establish carbon taxes, which may increase our energy costs, affecting product competitiveness.</p>	<p>Mid term (three to five years)</p>

## Financial impact

- Increasing the number of days for storage of ingredients/ materials requires additional rented warehouses results in an increase in costs
- Disruptions in the transportation of raw materials or products results in an increase in warehousing costs
- Equipment damage results in asset value damage
- Damages in raw materials or products results in an increase in operational costs and decrease in revenue

## Adaptive management strategy

- Production process adjustment, change the order of production according to material shortage and water shortage time
- For intermittent production of products, the priority is to produce products with a short shelf life of raw materials
- Establish a Water Resources Response Team to monitor the water consumption efficiency in the plant
- Sign a water supply agreement with water suppliers to give priority to supplying water to the plant in the event of water shortage
- In the event of a Level 1 water shortage, initiate response measures such as switching plants for production or production reduction
- Rent generators for power outages
- Avoid flooding areas when selecting plant locations
- Take out disaster insurance policy for plants to reduce financial impact
- Plan emergency response mechanisms and regularly conduct risk assessments
- Prepare raw materials enough to last for 2–3 months

## Management Goal

- Monitor water conditions and continue to optimize response measures and management mechanisms
- Continue to optimize the efficiency of water consumption in each plant and introduce water saving programs
- Diverse tea raw material supply establishment
- Stable high quality and quantity of domestic and foreign dairy sources
- Refine source safety management and reduce procurement risks of raw materials

- Fines imposed due to violation of regulations results in an increase in operating expenses
- Product carbon footprint verification expenditures results in an increase in operating expenses
- Alternative materials and packaging R&D increase operating costs; at the same time, due to the light weight of products, waste treatment expenses are decreased




- The Central Research Institute, FSC and Production Units immediately grasp new product packaging label policies, while making new labeling requirement in advance
- The “Packaging Label Review Process” has been set up. Each business group, research unit, marketing planning office, production plant and QC unit work together to prevent improper labeling and marketing
- There is also a “Packaging Team” in place for the research and development of lightweight packaging materials and material substitution

- Product labelling is in compliance with regulatory standards
- Introduction of most suitable, environmental and functional packaging materials

- Payment of carbon fees results in an increase in operating expenses
- Payment of violation fees results in an increase in operating expenses
- Due to renewable energy regulations, depreciation of equipment is increased (installation of renewable energy equipment), operating costs increased (procurement of renewable energy power certificates), or operating expenses increased (payment of allowance)

- Inventory and performance evaluation of annual energy consumption and greenhouse gas emission of the organization
- Product footprint introduction
- Energy conservation and carbon reduction project introduction
- Establish a Green Energy Management Center to coordinate and manage green energy projects of Uni-President and each affiliated company
- Installation of solar photovoltaic (PV) system

- The annual average power saving rate of each general plant is >1% for 2020–2024.
- Current annual target for carbon emission intensity for each production plant
  - ▲ For units that reached the target in the previous year, the performance for the year will be reduced by 1%
  - ▲ For units that did not reach the target in the previous year, the performance for the year will be reduced by 2%

Climate risks and opportunities		Potential impact to Uni-President	Time interval
 <p>Transition risk</p>	<p>Stakeholder concerns</p>	<ul style="list-style-type: none"> <li>To increase consumers' awareness of sustainability, NPO and NGO organizations proactively promote carbon reduction, plastic reduction products and related actions to change consumption behaviors of consumers. If we do not make timely response or launch related products, it may affect our product sales.</li> <li>Faced with the pressure of many sustainability ratings, a poor sustainability rating may affect the willingness as to whether an investor will make an investment, as well as the consumers' sense of brand identity.</li> </ul>	<p>Mid term (three to five years)</p>
 <p>Transition risk</p>	<p>Raw materials management resilience</p>	<p>Climate change may affect the stability of raw material supply, resulting in an increase in raw material costs or raw material supply chain disruption. Given this, we must improve the versatility of raw material resources to increase the stability of supply chain sources to respond to different risks.</p>	<p>Medium to long term (three to five years)</p>
 <p>Opportunity</p>	<p>Improve resource efficiency</p>	<p>We continue to enhance product yields and reduce food waste through process improvement. At the same time, we promote waste recycling and reduction to improve waste treatment efficiency. By doing this, we increase the opportunities to create new markets while reducing waste treatment costs.</p>	<p>Short term (less than three years)</p>

## Financial impact

- If sustainability performance is poor, it may lower an investor's willingness for investment, further increasing borrowing costs
- A consumer's purchasing willingness is affected due to sustainability brand image or lack of sustainable products, resulting in a decrease in revenue

## Adaptive management strategy

- Continue to invest in the R&D of new types of bakery, fresh food, and high nutrition products and processes
- Proactively develop and expand lightweight and optimal packaging materials
- Carry out surveys on a regular basis to get hold of issues concerned by stakeholders

## Management Goal

- Continue to refine quality products
- Introduce optimized, environmentally friendly and functional packaging materials

- Unstable raw material supply prices of raw materials result in an increase in operating costs
- Alternative material selection and development results in an increase in operating costs

- Stable management of raw material sources
- R&D of flavored raw material replacement
- Supply chain stability (e.g. alternative material response and development, get hold of supply source situation from suppliers on a periodic basis)

- Diversify tea raw material supply establishment
- Stable high quality and quantity of domestic and foreign dairy sources
- Refine source safety management and reduce procurement risks of raw materials

- Waste treatment expenses are reduced as a result of the promotion of waste recycling and reduction of the weight of waste
- Due to the improvement of production efficiency, raw material consumption is reduced, decreasing operating costs

- Installing sludge dryers, soybean residue dryers and expanding the possibility of resource utilization of tea residue in the future
- Evaluate commercialization of soybean residue and biogas power generation
- Resale of anaerobic sludge
- Carry out product process improvement through the Technology Group to reduce raw material consumption

- Waste recovery rate over 95.5%



### 3.2.4 Energy Consumption and GHG Emissions Management Performance

In order to be on par with national and global policies, we set 2005 as the base year for GHG reduction and energy management in accordance with the national policies of Taiwan. The short-term target mainly focuses on energy and carbon intensity control, while the mid- and long-term target is to control the total volume. The targets set for 2020 energy consumption and GHG emissions have been achieved. For related key achievements, please refer to Uni-President Corporate Sustainability Management 2020 – Sustainable Governance Implementation Performance.

#### “Energy Saving Elite, Leading Innovation” – Yangmei General Plant was awarded 2020 Energy Saving Benchmark Silver Award by the Ministry of Economic Affairs

The new Yangmei General Plant was designed with green materials and has attained the Green Building Label. We introduced energy-saving glass (sandwich glass) and built a rainwater recovery system to improve the consumption efficiency of the plant’s energy and water resources. The building was awarded Energy Saving Benchmark Silver Award by the Ministry of Economic Affairs in 2020.

#### [Highlighted Energy Saving Project]

- Improvement of the sterilizer’s ice water consumption: To improve product quality, the temperature of the sterilizer was reduced by 10 degrees, further saving steam usage by 437.7 T/year
- Reduce warehousing energy consumption
- Improve the air tightness of the door seal of the refrigerated shipping terminal
- Additional boosters in the filling machine to improve energy consumption
- Air conditioning activation time management
- Change water tube boiler to natural gas system



#### Energy consumption status

In 2020, the main energy use was natural gas 696,684.69 GJ (46.97%), electricity 694,860.58 GJ (46.85%), and fuel oil 67,613.14 GJ (4.56%), with a total calorific value of non-renewable energy consumption is 1,483,270.16 GJ<sup>Note 1</sup>, an increase of 15,342.79 GJ from 2019. This is mainly due to the increase in electricity consumption as a result of production increase in 2020 from 2019. Due to promotion of switching from fuel oil to natural gas for boilers, natural gas consumption also increased, further affecting annual energy consumption.

Note 1 : The calorific value conversion factor is based on the calorific value of energy products announced by the Bureau of Energy of the Ministry of Economic Affairs.

In addition, to reduce GHG emissions from electricity use and large electricity users, we have been developing renewable energy since 2010. In terms of the solar PV system, a total of 8,169 kWh (29.41 GJ) of green electricity was generated this year. In the next five years, we plan to install solar PV systems to meet legal obligations.

#### GHG emissions

Uni-President’s 2020 annual GHG emissions were 157,952 metric tons CO<sub>2</sub>e. The GHG emission intensity was 116.32 kg CO<sub>2</sub>e/kg of production and reduced by 2.64% compared to 2019. To urge the general plants to achieve the emission reduction target, the Energy Management Team conducts reviews on general plants that has not achieved the target and adjusts the target with reference to the historical implementation status.

### 3.2.5 Reduction Action

In a bid to achieve our medium and long-term reduction targets, we are gradually replacing fuel oil with low-pollution natural gas, coupled with annual implementation of energy saving projects. The contents of projects include equipment replacement and renovation, equipment parameter optimization and production process regulation. In 2020, the energy saving projects of each plant have reduced 4,798 metric tons of CO<sub>2</sub>e, saving NT\$28.07 million. Also, in order to the management of product carbon footprints, we continue to certify the carbon footprint of eight products. Among these products, the carbon footprint reduction of Uni-President's ramen noodles achieved 3% in 2020 and have attained a carbon reduction label after audit by Environmental Protection Administration.

#### 2020 Product Carbon Label



**Xinshi General Plant – Optimize boiler operation efficiency**

**95,117 cubic meters of natural gas a year was saved, reducing 178.72 tons of CO<sub>2</sub>e emissions, saving expenses by NT\$0.97 million.**

**1.Introduction of O<sub>2</sub> control system :**

Introduced the O<sub>2</sub> control system to go with the existing O<sub>2</sub> boiler system monitor. This reduces boiler gas ratio to achieve the saving of boiler natural gas consumption, while also complying with the requirements of the announced oxygen content for exhaust gas.

**2.Equipment Modification :**

Adjusted the control design of boilers, added wind turbine motor inverter and independent servo motor to improve the operation efficiency of the equipment.



**Hukou food plant – reduce electricity consumption per unit in the plant**

**371,440 kWh of electricity a year was saved, reducing 197.98 tons of CO<sub>2</sub>e emissions, saving expenses by NT\$1.14 million.**

**1.Air knife water removal system was added with pressure regulating values to improve air pressure usage**

Through the coking improvement project, the flow volume of the flavoring liquid is reduced, while reducing pressure of the air knife water removal system.

**2.Improvement of time sequence for ice and water host compressor lifting and lowering**

Added time sequence for each compressor that can activate two compressors of the same group instead of two ice water machines, avoiding energy waste by idling the ice water machine.



**Zhongli Bread Plant – Compressor energy saving improvement for the bread plant**

**244,210 kWh of electricity a year was saved, reducing 130.16 tons of CO<sub>2</sub>e emissions, saving expenses by NT\$0.65 million.**

Compressor equipment at the bread plant has been renewed, reducing unit energy consumption by 26.45%.



**Xinshi Dairy Plant I – Improvement of cleaning time of finished barrels**

**50,231 cubic meters of natural gas a year was saved; reducing 94.38 tons of CO<sub>2</sub>e emissions, saving expenses by NT\$1.95 million.**

Installed valve to help release pipeline exhaust, while modifying the process to synchronize the cleaning time of finished barrels. By shortening the cleaning time by 20 minutes, steam consumption can be reduced, further saving the use of natural gas.



**Xinshi Dairy Plant II – Improvement of crate washer energy saving**

**35,981 cubic meters of natural gas a year was saved; reducing 67.61 tons of CO<sub>2</sub>e emissions, saving expenses by NT\$1.02 million.**

The amount of steam input is adjusted without affecting the temperature of cleaning water through the adjustment of equipment parameters. Also, recycled hot water is used as a hot water source to reduce the energy loss of steam heating into the water tank.



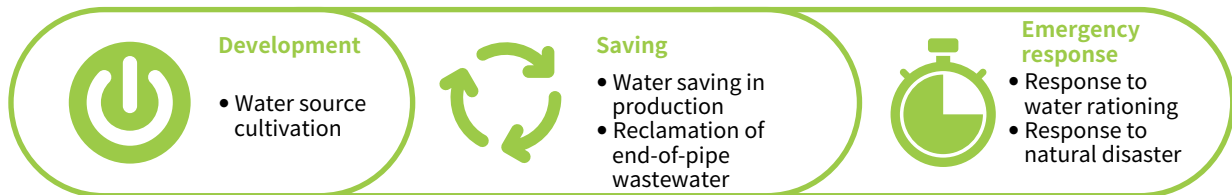
### 3.3 Water Resources Management

Uni-President has multiple products and has a high dependence on water in the process of manufacturing juice, tea, milk and other beverage products. Although there is sufficient rainfall in Taiwan, water resources are unevenly distributed, and on top of that, climate change has recently intensified torrential rain and water depletion, which increases the complexity of water management. Thus, we regard water as a major environmental and operational issue, and will dedicate efforts to improve our resilience and adaptation on water resource management.

#### 3.3.1 Water resource management strategies

To avoid the numerous risks to water resources, Uni-President has three standpoints, including resource development, resource saving and emergency response, which manage water resources based on the energy management team's hierarchical management system. We also hold regular meetings to discuss issues related to water resources, set up policies, and review the performance of water conservation, as well as integrate water conservation concepts into detailed planning, design, production and working environments via various means such as posters, slogans and training courses.

#### Water resource management strategies



#### Water resource risk identification and response

Uni-President's products are closely linked to water resources, especially at the raw material and manufacturing stages in the overall value chain. Raw material items come from crops, and water as an integral part of our products is crucial for their production. Although there is an abundance of rainwater in Taiwan, water distribution is highly variable (due to changing amounts of rainfall and rainy seasons) and the fact that our water is supplied from the reservoir means that water conditions have been unstable for many years. To understand more about water withdrawal risk and its impact on the environment, we refer to the research data released by the National Science and Technology Center for Disaster Reduction to get an understanding of the probability of drought risk with each source of water withdrawal. Moreover, we also identify the overall water consumption risk of each plant with reference to the 2020 water consumption data. The results indicate the control of water conditions and production scheduling are management priorities.

#### Water consumption analysis of each plant

	Yangmei Plant	Zhongli Plant	Hukou Plant	Taichung Plant	Yongkang Plant	Xinshi Plant
Water Condition Risk (Note 1)	Shihwmen Reservoir	Shihmen Reservoir	Baoshan Reservoir	Liyu Carp Lake Reservoir	Nanhua Reservoir	Wushantou Reservoir Tsengwen Reservoir
Water Consumption Percentage (Note 2)	0.24%		0.54%	0.01%	0.11%	0.17%
Overall Water Consumption Risk (Note 3)	Low Risk				Moderate Risk	

Legend: ■ Low Risk ■ Moderate Risk ■ High Risk

Note 1 : Water condition risk data : With reference to the Disaster Risk Adaptation Platform.



<https://dra.ncdr.nat.gov.tw/Frontend/Disaster/RiskDetail/BAL0000022>

Note 2 : Water consumption impact percentage : Water used by each plant in 2020/water supply data released by each reservoir in 2019.

Note 3 : Overall water consumption risk : The risk level identified after the combining of information on water condition risk data, water consumption impact percentage, and historical plant operation experience.



## Water Resources Risk and Adaptation

Risk Source	Risk Issue	Adaptation Action
 <p>Regulations</p>	<ul style="list-style-type: none"> <li>• Response to laws and regulations</li> <li>• Water consumption fee collection method</li> <li>• Water Pollution Control Act</li> </ul>	<ul style="list-style-type: none"> <li>• Establish a water Condition Response Team to closely monitor the water consumption of each plant and water conditions in each area</li> <li>• Acquire green building certification for all new plant buildings</li> <li>• Invest in and improve environmental equipment</li> <li>• Establish and monitor targets for discharged water quality</li> </ul>
 <p>Disasters</p>	<ul style="list-style-type: none"> <li>• Insufficient water resources</li> <li>• Increased chance of heavy rainfall and floods</li> </ul>	<ul style="list-style-type: none"> <li>• Establish natural disaster response standards and conduct regular emergency response drills</li> <li>• Promote water conservation projects to enhance water use efficiency</li> <li>• Rainwater recovery equipment installed in the new plant</li> <li>• Establish water restriction and response plans</li> </ul>

## Water Resources Risk Control Mechanism

We have set up a water resources response team to prevent production losses caused by unstable water conditions. The supervisor of the Technical Group is appointed as the convener, and is responsible for cooperating with all relevant units and assigning work duties in order for different units to jointly develop response plans while strengthening the coordination among the emergency response team. We have also entered into a sales and purchase agreement with the water suppliers, agreed on reasonable transportation costs with water transportation operators, while effectively controlling the transportation schedule, ensuring that water is supplied during water shortages. In the event of a water shortage, we initiate related countermeasures according to the levels of water restrictions announced by the government. In doing so, we minimize operational losses caused by water shortages.

### Management mechanism and division of labor of the Water Resources Response Team



## Water shortage countermeasures of Uni-President

Water rationing  
measures

## Phase I

- Reduce water supply pressure
- Stop water supply to non-urgent or unnecessary facilities

## Phase II

- Stop high consumption water supply users
- Reduce water supply

## Phase III

- Stop water in turns by area or in all areas

## Phase IV

- Fixed time and fixed quantity supply

Emergency response  
of Uni-President

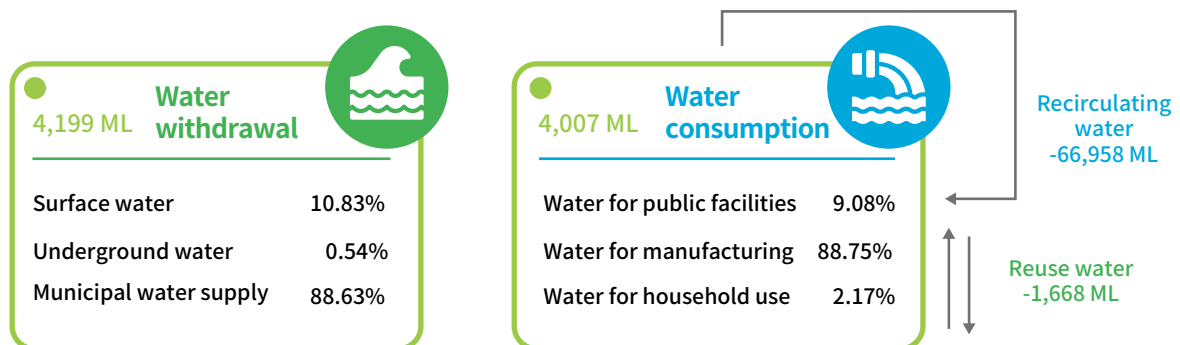
- Increase the frequency of Water Supply. Information Reports and online reporting of water consumption and storage to facilitate situation control
- Check the quality of well water and purchased water after phase II water rationing is announced
- Verify the status of other water sources, including capacity, water quality, and water rights

- Initiate the “Water Supply Emergency Response Mechanism.” Manage purchased water, water transportation, and dedicated intakes, and test water quality and treat incoming water
- Activate water storage equipment and increase storage
- Perform inter-plant dispatch, with the Hukou Plant in northern Taiwan and the Xinshi General factory in southern Taiwan as the dispatch centers to supply water to other complexes in a timely manner
- Adjust production processes and product prioritization, and increase normal temperature inventory

## 3.3.2 Water Consumption Status in Production Sites

In 2020, the total water consumed by our plants was 4,199 million liters (3,721 million of municipal water supply, 455 million liters of surface water, and 23 million liters of groundwater). As our production increased in 2020, total water consumption also increased by 0.88% from 2019. Furthermore, we will continue to promote water-saving projects to improve the efficiency of water use so as to mitigate the impact of water resources driven by production.

## Types of water used at production plants







Note:

1. Water for manufacturing includes water for soft water systems, boilers, and products.
2. Water for public use includes water for cooling towers, washing towers, cleaning and pouring, and fire fighting.
3. Water for household use includes water for drinking, washing and flushing toilets.

### 3.3.3 Water Conservation Action

Apart from water that is required in production processes, we make an effort to promote efficient water usage in the plant through four water conservation strategies. These include water source development, process water source improvement, process water recycling, and end-of-pipe wastewater recycling.

#### Water Saving Strategy

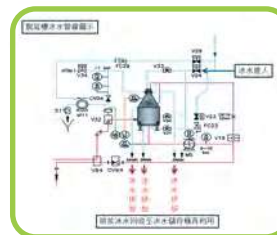
 <p>Water source development</p>	<ul style="list-style-type: none"> <li>• Rainwater : Rainwater recovery equipment installed in the new plant for cooling towers and flushing toilets</li> <li>• Air-conditioning condensate : Recovered into the clean water system or used as refill water for cooling water towers</li> </ul>
 <p>Process Water Source Improvement</p>	<p>Select low-water-consumption machines and establish “Water Balance Management” to control the reasonable consumption of machines in each plant used as the reference of calculating the plant’s water recovery rate and water saving rate</p>
 <p>Process Water Recycling</p>	<p>Extend the scope of water recovery and reuse, while reducing wastewater generation For instance : steam condensate recovery, RO wastewater, discharge water recovery, and finished barrel jacketed ice water recovery</p>
 <p>Reclamation of end-of-pipe wastewater</p>	<p>According to the classification of the machine’s wastewater nature, discharged water quality is checked from time to time, and is effectively treated and recovered by the wastewater treatment plant. For instance, acid and alkaline discharge from the manufacturing process is recovered into the clean water system or into the cooling water tower as secondary water after being treated and monitored</p>

#### 2020 Representative Water Saving Projects

##### Yangmei Plant II – Ice Water in Degassing Tank Recovery Improvement

A total of NT\$65,500 was invested, saving 12.81 million liters of water per year

The ice water in degassing tank was originally discharged directly; now it is recovered for reuse after being recycled from the degassing tank

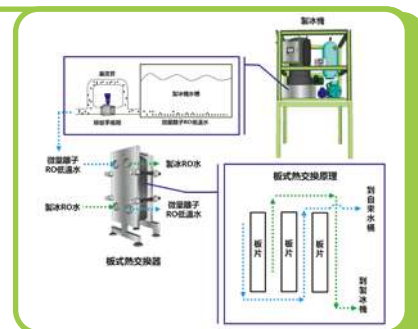


Note: The annual water saving volume is calculated according to the flow meter before and after the project implementation

##### Hukou Ice Cube Plant – Reduce Ice Making Water Efficiency

A total of NT\$141,000 was invested, saving 3.51 million liters of water per year

The ice maker was originally designed to overflow water to help reduce water conductivity. This year, the design was updated and it now sends the overflow water to the heat exchanger for municipal water tank, reducing water waste



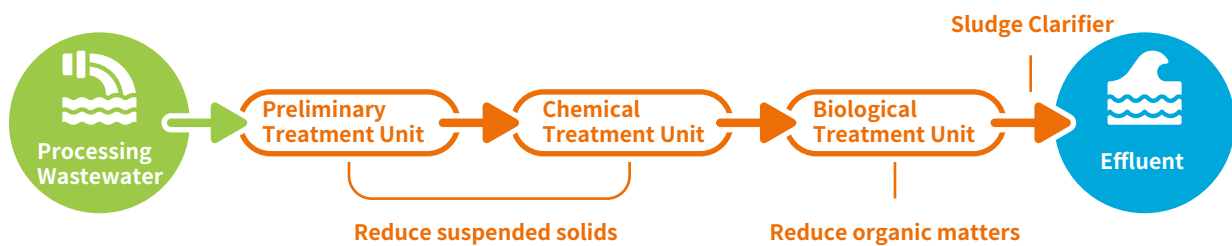
Note: The annual water saving volume is estimated according to the volume of ice-making overflow before and after the project implementation

### 3.3.4 Wastewater Management

As Uni-President's wastewater is mainly organic, oil and grease, and suspended solids, we have set up wastewater treatment equipment for each plant. Wastewater is discharged after front-end pretreatment and biological treatment, or directly discharged into exclusive treatment plants in the industrial park. In order to comply with national effluent standards, we have established strict standards in accordance with national laws and regulations. By doing this, we inspect the functions of wastewater treatment plants and the concentration of effluent in each plant. We have also set up targets for management on annual wastewater quality as the basis for assessing management effectiveness.

In 2020, the total volume of wastewater from each plant was 3,237 million liters. The average COD concentration 32.68 mg/L, a year-on-year decrease and lower than our target of 70 mg/L, while the average COD reduction equivalent was slightly higher than the previous year by 0.78%, indicating our steady performance regarding wastewater treatment.

Wastewater Treatment Process Schematic Diagram



Uni-President Wastewater Discharge Control Standards

#### Plant Discharge Water Quality

BOD  $\leq$  22.5 mg/L

COD  $\leq$  75 mg/L

SS  $\leq$  22.5 mg/L

#### Effluent Standards

BOD  $\leq$  30 mg/L

COD  $\leq$  100 mg/L

SS  $\leq$  30 mg/L

#### Standards for Setting of Management Goals

Our self-imposed strict regulations (75% of the regulatory limits)

#### Yangmei Plant/Zhongli Factory – Centrifugal Dewatering Machine Replacement Project

NT\$5.78 million was invested to reduce sludge moisture content to 82.5%

Sludge dewatering equipment in Zhongli and Yangmei plants were updated to reduce sludge moisture content, further reducing the waste sludge weight and treatment costs.



## 3.4 Pollution Prevention

### 3.4.1 Air pollution management

Our air pollutant emissions are mainly PM, SO<sub>x</sub>, NO<sub>x</sub> and volatile organic compounds (VOCs). The pollutants may come from material processing, boiler combustion and wastewater treatment. In order to effectively reduce air pollution and prevent emissions, we installed cyclone dust collectors at the plant to increase the availability of equipment to effectively reduce SO<sub>x</sub> and NO<sub>x</sub> emissions. Also, to effectively reduce SO<sub>x</sub> and NO<sub>x</sub>, oil-fired boilers have been gradually converted to natural gas. In 2020, a total of NT\$14.28 million was jointly invested by Yongkang and Yangmei Plants, which expect to see air pollution emissions reduced by 20%–50%.

In 2020, all plants emitted a total of 69.28 metric tons of air pollutants. Among these air pollutants, VOCs increased by 4.69% from last year due to an increase in raw materials used in process. NO<sub>x</sub> was not counted in 2019 as natural gas emissions were not included in the calculation of the entire plant on the air pollution fee reporting system. It was added in 2020, hence the increase of NO<sub>x</sub> emissions. SO<sub>x</sub> was reduced at the Yangmei Plant as heavy oil boilers were converted to gas-fired systems (1 unit). PMs on the other hand are stored at Yongkang's TMR Center, their designated indoor storage area as recognized by the air pollution emission audit carried out by the Department of Environmental Protection. Its PM control efficiency should be changed from 0% to 98%. Therefore, emissions of PMs for this year decreased by 11.19% from 2019.

### 3.4.2 Waste Management

Uni-President has formulated the “Waste Management Measures” to ensure that all waste is properly classified, managed, cleared and disposed of. Waste generated by each plant is classified into general waste, hazardous waste (organic experimental waste liquid) and recyclable waste. In 2020, a total of 37,906 metric tons of waste was generated during operation, an increase of 336 metric tons from 2019. As a means to promote waste reduction while strengthening resource classification management of each plant, we have set goals for waste resource recovery rate (95.5% for this year). For four consecutive years, we have achieved our management goals.

#### Introduce circular economy thinking and continue to reduce waste generation

Due to the special nature of the food industry, “food safety” is the first priority of our management principle. Although the effectiveness of waste source reduction is often limited, we believe that by increasing the potential of waste recycling, we can effectively achieve resource savings, reducing the burden on the environment. Based on this, we make an effort to plan waste reuse solutions through innovative thinking – this year, we have reused 10,863 tons of soybean residue by transferring them to the feed mills to be used as feed. Additionally, we have also installed a sludge dryer and successfully reduced the sludge moisture content by 40% and the weight of sludge by 548 tons within three months.

#### Xinshi Plant – Sludge Reduction Project

NT\$19.19 million was invested to reduce sludge moisture content to 40%

The introduction of sludge drying equipment reduced sludge moisture content to 40%, further reducing waste weight and treatment expenses.



• Sludge dryer

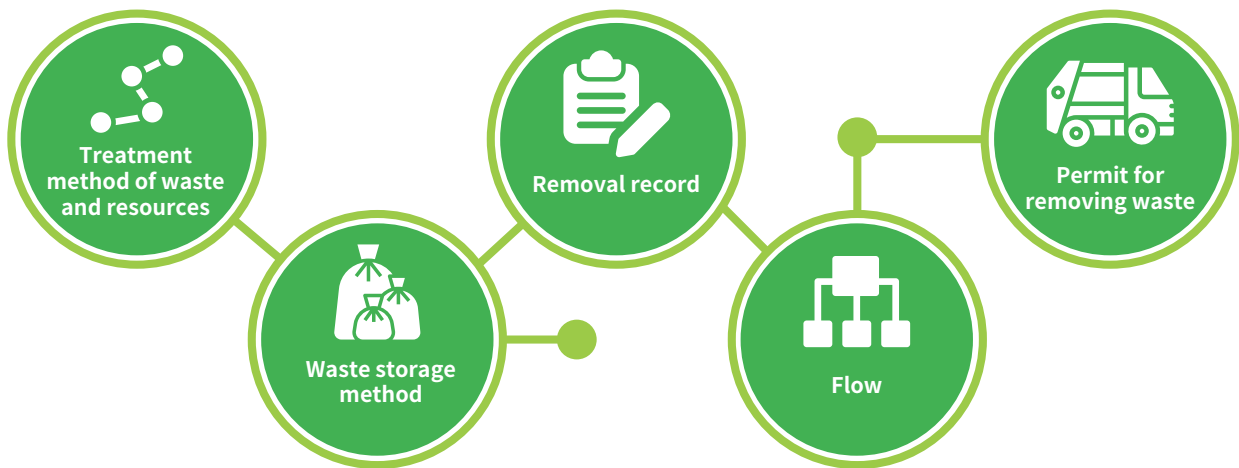


• Sludge after drying

## Control waste flow to ensure effective management

All waste generated by Uni-President is removed and its recovered substances properly handled by a legal removal company. For waste that may be reused for food, we have clear regulations in place that prohibits its use in food reprocessing or to be used as food to ensure food safety. In addition, in order to strengthen the flow tracking of waste, we use a GPS system to clearly track and inspect the flow of waste, resources, and hazardous waste generated by each plant. The inspection includes treatment of waste and resources, waste storage approaches, disposal records, flow, and transportation licenses. In 2020, a total of 27 waste, resources, and hazardous waste treatment companies were inspected, with a total of 118 tracked. There were no violations discovered in the inspection and tracking results.

### Key Items for Waste Treatment Plant Inspection



### 3.5 Packaging Materials Management

For many years, we have been making every effort to improve the sustainability of our product packaging materials. In response to the global trend of plastic reduction, waste reduction and recycling in recent years, we have set up a Packaging Technology Team to drive the increase in use of environmentally friendly packaging materials and packaging reduction. Not only do we purchase internationally recognized sustainable and environmentally friendly packaging materials, we also regularly review the feasibility of optimizing existing product packaging materials. Although Taiwan's recycled plastic food packaging regulations have not yet been adjusted to follow the global plastic reduction trend, we still proactively seek any possible plastic reduction methods to gradually reduce the use of plastic under the basis of ensuring food hygiene and safety.

In 2020, we continued to purchase paper packaging materials certified by the FSC™ (Forest Stewardship Council) in the production of aluminum foil for the "MineShine" series and the "Try It!" series. This approach enhances our contribution to forest-friendly products. The ratio of FSC™ procurement amount accounted for 42.87% of the total procurement amount of paper packaging materials in 2020.

In 2020, plastics used in our products accounted for 18,025 metric tons, among these plastics, PET, PP and PE accounted for over 97%. This year, the thickness of the film used for our 6-pack beverage product and 4-can PET bottles was reduced by over 20% thanks to our precise packaging technology. This contributes a reduction of 5.38 metric tons of plastic film usage. Through adjusting the structure of the PP box by the Refrigeration Department and the 4,530 mL lightweight PE bottle of the Dairy Division, plastic use was effectively reduced by 109.05 metric tons, totaling 114.42 metric tons. The plastic reduction achievement for product packaging materials has also saved NT\$763,000 treatment fees for container recycling and removal.

6-pack beverage product

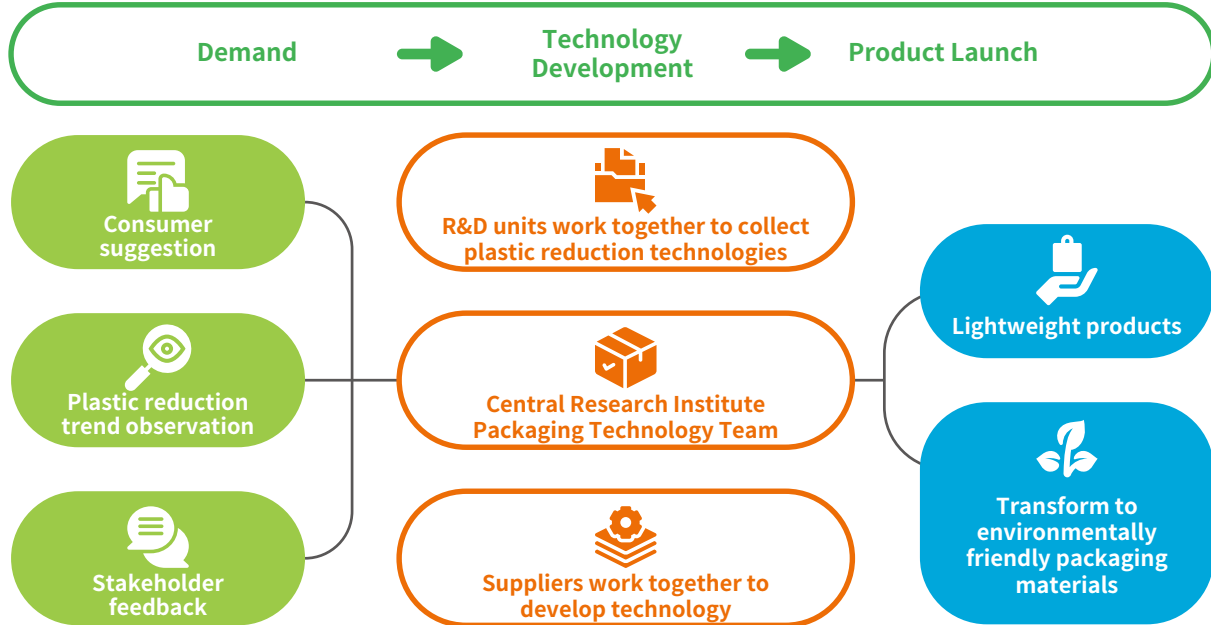


4-PET bottle product



## Packaging Materials Management and Product Development Process

### Product packaging reduction – environmentally friendly packaging



Note : The change to environmentally friendly packaging materials includes the use of reduced plastic products and environmentally friendly packaging materials. For example, polystyrene bowls of Imperial Bowl Instant Noodles have been changed to paper bowls

### 2020 Product Plastic Reduction Results

Plastic Reduction Project	Total Product Packaging Weight Reduction (tons)
Thinning of plastic film for multi-pack beverages and PET bottles	5.76
4,530 mL lightweight PE bottle of the Dairy Division	97.60
Lightweight PP box of the Refrigeration Department	11.45
Total	114.81

