

Green Earth Smiles

Oriental Union  
Chemical Corporation

2022 • ESG Report



# Oriental Union Chemical Corporation

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ESG Report

# 2022



## About this Report

### Editorial Policy

Welcome to the ESG Report of the Oriental Union Chemical Corporation (stock code:1710, hereinafter referred to as the "OUCC") published in 2022. We would like all the stakeholders that care for us to better understand the challenges of sustainable development faced by the chemical industry, as well as our efforts and achievements in Environmental, Social, Governance (hereinafter referred to as the "ESG" or "Sustainability") aspects.

This ESG Report is issued in both Chinese and English versions. You are welcome to download both from our official website: <https://www.oucc.com.tw/>

### Reporting Period and Organizational Boundaries

The ESG Report discloses the ESG management policy, material topics, responses, and action performance of the OUCC in 2022(Jan. 1 to Dec. 31.) Some issues tracing back to 2020 or 2021 have been included to ensure a comprehensive report of project performance and outcome.

The financial performance described in this report is from the data of the OUCC's individual financial statement. The environmental and social performance covers OUCC Headquarters and the Linyuan Plant, and will be indicated in the paragraph if the scope of disclosure differs from the above.

- Date of last publication: June 2022
- Date of next publication: June 2024

### Writing Reference and Guarantee

The ESG Report relevant information and data composed in line with the corporate spirits of sincerity, diligence, thrift, prudence and innovation as core structure, were guaranteed by SGS-Taiwan and integrated by the Secretariat of the ESG Committee, to ensure its compliance with relevant international framework of Sustainability. The final issues and information are reviewed and authorized by the top management prior to publication.

Sustainability  
Report

- GRI Standards (2021)
- Sustainability Accounting Standards Board, SASB: Chemical Standard
- AA 1000 ASv3 Type 1 Moderate Assurance Level
- ISAE 3000 Independent Limited Assurance
- Climate-Related Information for Listed and OTC Companies



Environment

- ISO 14001
- ISO 14064-1
- ISO 50001



Society

- ISO 45001



Governance

- Regulations Governing the Preparation of Financial Reports by Securities Issuers
- ISO 9001

### Feedback

If you have any comments on the "Oriental Union Chemical Corporation 2022 ESG Report," you are invited to forward your valuable comments and advice to keep us move towards the concept of sustainable governance.

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# 2022 ESG



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## Chairman's Message

### Path towards Sustainability Through Green Transformation

OUCC has always strived to become the most competitive team in the chemical industry as a company of chemical materials which promotes sustainable development. With guidance of its core spirits, the sincerity, diligence, thrift, prudence and innovation, OUCC expects to implement the sustainability concept in the aspects of environmental protection, technology, responsibility and service.

OUCC have been fully aware of for a long while the urgency of regulating and mitigating carbon emissions in response to global climate change finally achieve the net zero emission objective. The Company's R&D and production teams are actively engaged in the technical development and commercialization of carbon capture and reuse, from which domain OUCC has made a crucial breakthrough in recent years by successfully transforming the CO<sub>2</sub> captured into high value-added products, which aid in generating economic benefits for the Company and achieving the triple surplus goals conducting to the economy, environment and society, in addition to substantially reducing the CO<sub>2</sub> emissions and performing industrial circular economy.

With huge and continuous investment in R&D to fulfill its goals in Green Production, Carbon Reduction, and New Materials, OUCC has enhanced its internal and external design and modification capacities, to optimize the current high energy consumption and high emission processes, to create innovative environmentally-friendly and diversified green materials. It is believed that every solid step the Company made towards the sustainability shall contribute to the green transformation of the chemical industry through the promotion of consumption and emission reduction, resource regeneration, and recycling trends.

In 2023, we will fine-tune the executive teams of the ESG Committee into "Sustainable Environment," "Product Liability," "Social Inclusion," "Corporate Governance," and "Secretariat" units to promote their functionalities. The relevant team supervisors are designated to act as the teams' conveners and implement clear and sustainable tasks in collaboration with the human resources therein. The ESG Development Committee shall be upgraded to the supervision level of the Board in the next phase, with Independent Directors served as supervisory commissioners to monitor and inspect actual operations regularly to secure the Company's long-term sustainability commitments and ongoing improvements.

To meet the proceeding objectives, OUCC has actively employed artificial intelligence (AI) technology for data analysis to strengthen production and process efficiency. The Big Data and AI applied in manufacturing help the Company better understand resource utilization, enhance production capacity and quality, and minimize energy consumption and carbon emission. These measures not only help the Company to meet its sustainable objectives, but also preserve its competitive edge in a highly competitive market.

With the stable profit as the cornerstone of sustainable development, the Company has obtained tangible cost savings, efficiency improvement, and created blue ocean business opportunities and niche markets, while pursuing its sustainable goals of Green Production, Carbon Reduction, and New Materials. As we are standing at a crossroads on the sustainability journey, we shall adhere to the core development principles of green & carbon reduction, CO<sub>2</sub> reuse and innovative materials, to ensure the Company's comprehensive development in environment, society, and corporate governance, with the aids of the ESG Committee execution and AI technology. It is believed that the sustainability vision can only be fulfilled through the collaborative efforts of all employees, supply chain partners, stakeholders, as well as the transformation of the chemical industry.

Chairman  
Oriental Union Chemical  
Corporation

徐旭東







## OUCC Sustainable Development Strategy



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## Innovation



The Sustainable Development Goals (SDGs) are the global principles for guiding sustainable development. As a global citizen, OUCC establishes a sustainability team to discuss and align the expectations of stakeholders with the Chemical Sector SDGs Roadmap in order to assess and identify the SDG issues and related sub-goals that OUCC should focus on first, based upon which the sustainability development strategies and actions are implemented. We pledge to continue developing innovative strategies and corporate sustainability goals in order to deliver sustainable development.

## Innovative OUCC

Keep up with the developing world, gain insight on trends with value, recycling, R&D and process innovations as a foundation for sustainable development



### Short-term Goal (2023)

- Continue to invest in R&D and actively develop high-quality and high value-added new EOD/POD product lines
- Increase the sales volume of specialty chemicals to 5,000 tons/month
- Develop deep processing techniques for ethylenediamine coproducts and polyetheramine related products and set up mass production factories

### Mid-/Long-term Goal (2024-2033)

- Develop products with low energy consumption, recyclable plastics, biodegradability, environmentally friendly
- Step into the domain of high-tech, high-value specialty chemicals
- Becoming the most comprehensive production factory for amine products domestically

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## Sincerity

## Ethical Governance

With trust as vital parts of corporate culture, the company fully upholds the spirit of self-discipline in corporate governance by complying with all the relative laws and regulations as well as the application of robust internal control



### Short-term Goal (2023)

- Establish an information management backup mechanism
- Continue to propose solutions on key ESG issues

### Mid-/Long-term Goal (2024-2033)

- Continue to improve internal risk management system
- Continue to enhance the ESG negotiation mechanism and action plan







## Diligent Partners

Uphold "Diligence excels all work, become diligent-oriented," work together with suppliers to provide high-quality and reliable services, and to become a trustworthy company for both customers and partners



### Solid Partner

#### Short-term Goal (2023)

- Implement factory-wide staff forum
- Conduct human rights training courses on the Responsible Business Alliance (RBA)
- Implement a new performance bonus system

#### Mid-/Long-term Goal (2024-2033)

- Conduct training courses in cooperation with the vocational training center

### Satisfied Customer

#### Short-term Goal (2023)

- Continue to effectively implement the ISO management system

#### Mid-/Long-term Goal (2024-2033)

- Continue to improve customer satisfaction

### Chemical Supply Chain

#### Short-term Goal (2023)

- 100% of new suppliers sign the "Suppliers' CSR Commitments"
- Existing suppliers complete the on-site or written evaluation

#### Mid-/Long-term Goal (2024-2033)

- 100% of freight forwarders acquire ISO 45001 certification
- Contractors' zero-work safety accident up to 990,000 safety man-hours



## Solid Contributions

With a sustainable and "down-to-earth" attitude, and genuine actions, we strive to shape a sustainable future of environmental well-being and social inclusion.



#### Short-term Goal (2023)

- 1% annual carbon reduction
- Five years of accumulated electricity saving totaling 5%
- Daily water saving of 2%
- Wastewater recycling system targeting at 70% recycling rate

#### Mid-/Long-term Goal (2024-2033)

- Accumulate electricity saving amounting to 10%
- Daily water saving up to 20%
- Calculate the water footprint
- Reach 10% green energy usage by 2025
- Focus on the study of low-carbon or carbon-free thermal application technology, as well as greenhouse gas storage technology



### Social Inclusion

#### Short-term Goal (2023)

- Participate in blood donation activities
- Continuous donations to disadvantaged groups
- Volunteer services to social care

#### Mid-/Long-term Goal (2024-2033)

- Applying core competencies to achieve social inclusion





## Prudence

## Prudent Thinking

Incorporate risk management into sustainable operations of various businesses with concept of precaution and safety. We are committed to a working environment of zero pollution, zero injury and zero accident



### Short-term Goal (2023)

- Optimize the sludge dryer and continue the sludge reduction
- Establish PI system, real-time monitoring of environmental protection data of each plant
- Continue to conduct emergency response training for all plants and suppliers
- Results of on-site inspections of the freight forwarders are listed in the allocation standard

### Mid-/Long-term Goal (2024-2033)

- Promote waste management reduction KPI
- Optimize prevention and control of equipment, as well as optimum emission quality
- Build a notification platform for high-risk operations
- Construct a chemical plant that adheres to the concept of "zero pollution, zero injury, and zero accident"



# Chapter. 01

## INNOVATION

### OUCC

**OUCC** aims to be "the most distinguished chemical material company" by continuing its investment in R&D and innovation as well as undergoing transformation. Through the accumulation of new technologies, OUCC is capable of developing ethylene oxide derivative products with high added values and specialty chemical products.

We provide a one-stop integrated service to various industries, customers and specialty project teams. An on-line information management platform also provides global customers comprehensive technical services and high-quality products.

OUCC targets to be a diversified, specialty chemicals centered chemical company as well as a green, sustainable enterprise that achieves profitability and growth at the same time.

- **Business Operations:** Production of petrochemical raw materials and manufacturing high value-added chemicals widely used by end products.
- **Products and Services:** Product areas include ethylene oxide (EO) and ethylene glycol (EG) and the like, covering traditional chemicals, specialty chemicals, and high-tech chemical materials.
- **Market Service:** Supply ethylene glycol and EO derivatives petrochemical products to major manufacturers in Taiwan and the Asia-Pacific region.



**2022**  
Sustainable  
Performance

- Promote circular economy to generate profit of NT\$**8.74** million per year
- R&D investment of NT\$**157** million
- Developing innovative technologies and applying for international patents



## Implementing the Circular Economy



OUCG continues to strengthen green production and high value layout. Besides proactively developing various high-valued EOD products, we also continue to improve production procedures and invest in equipment, promote the innovation of circular economy with the thinking of green circular production, and therefore decrease the impact of production on the environment.

### New Business Model: The Circular Economy

We adopt a "circular economy" strategy and aim to implement the core concept of "minimizing environmental impact and maximizing resource value" through technological innovation in our processes, to establish our own circular economy model.

OUCG has independently developed the "Potassium Iodide (KI) Recycling Technology." Through this recycling technology, the potassium iodide is efficiently recovered and reused, thereby reducing the generation of waste. This transformation converts the potassium iodide waste solution from "waste" to a "usable renewable resource," creating additional economic value. In addition to saving waste treatment costs, the by-products generated during the process also contribute to the company's revenue.

Traditional Thinking		Circular Economy Thinking
EC process → KI waste solvent → Outsourcing	Process	EC process → KI waste solvent → Reuse resources → Invest in a new process
In the production of ethylene carbonate (EC), potassium iodide (KI) is used as a reaction catalyst, and the waste solvent produced during the production process contains 5% potassium iodide (KI,) which used to be outsourced for treatment.	Description	Increase the concentration of potassium iodide (KI) produced in the ethylene carbonate (EC) plant, upgrade it into a product of reusable resource, and reuse it in another production process.
NT\$5.47million per year	Outsourcing costs	NA
NA	Economy benefits	1. Save KI procurement costs NT \$2.01 million 2. MEG recycling benefit approx. NT\$1.26 million 3. Save approx. NT\$5.47 million for outsourcing
outsourcing processing costs NT\$5.47 million (Note)	Total	Benefits NT\$8.74 million
NA	Environmental benefits	1. Reduce waste solvent transportation of 273 tons 2. Reduce carbon emissions of 25.277 t-CO <sub>2</sub> e 3. The production and synthesis process of KI may require a significant amount of energy consumption. However, efforts can be made to reduce energy consumption during the production process, thereby lowering the carbon footprint and GHG emission.
NA	Social benefits	1. The income generated from reusing the byproduct is contributed to the upgrade of employees' occupational health, safety and welfare. 2. It decreases the risk of leakage from the transportation of waste solvent, which protects the safety of community residents (such as causing skin rashes).

Note :

1. The disclosure period for the above economic benefits information is for the year 2022.
2. the actual potassium iodide (KI) produced in 2022 were 273 tons, with an outsourcing cost of approximately NT\$5.47 million.

### The Circular Economy - Air Separation Units

OUCG's utilized sales strategies of circular economy, by way of investing in the Air Separation Unit to supply excess industrial gas to factories, has created a win-win by turning trash into gold, and exhaust into company revenue.

#### Past method

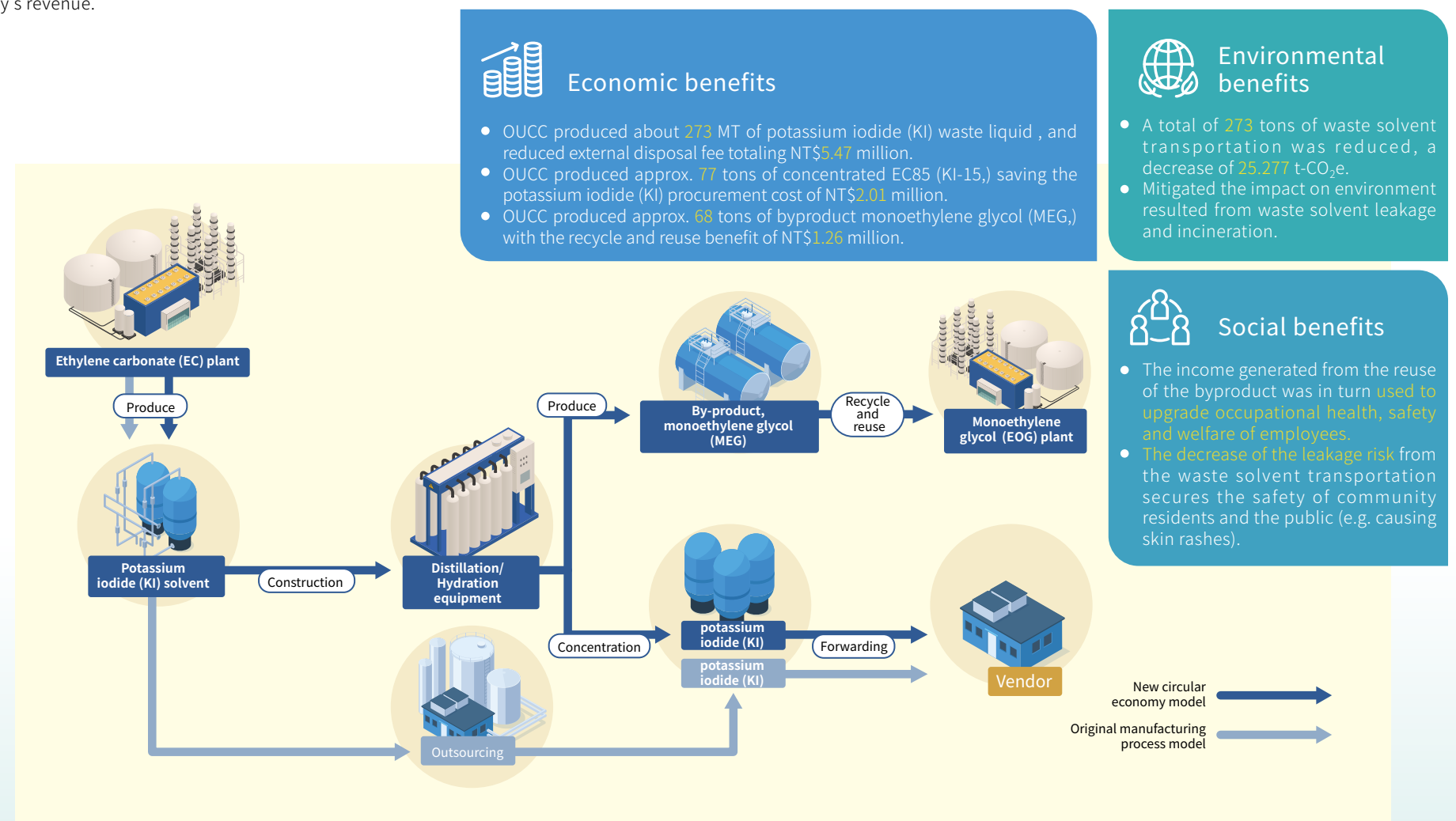
- Due to the saturated industrial gas demand in Linyuan industrial area, the remaining industrial gas can only be emitted, and the emission volume used to reach 7,500MT/month.

#### New circular economy method

- The original 7,500MT/month discharged industrial gas have all turned into operating income, adding approximately NT\$10 million of benefits every month, contributing to around NT\$120 million of revenue each year.
- FPG (Linyuan Plant) therefore decommissioned the old air separation unit to reduce the overall energy consumption.
- From 2020 to 2022, there was a cumulative reduction of approximately 270,000 metric tons of industrial gas emissions, contributing to a cumulative revenue of NT\$360 million.

### Innovative Process, Circular Sustainability

The development and design of the "distillation/hydration equipment" allows potassium iodide (KI) waste solvent produced by the ethylene carbonate (EC) plant to be concentrated, upgrading the originally paid "external waste" into reusable resource products, which can then be utilized in new production processes. The potassium iodide (KI) waste solvent was successfully concentrated to 15% potassium iodide (KI) for recycling, and along came the by-product, monoethylene glycol (MEG).







## Innovative R&D



### Vision of OUCC's Innovative R&D

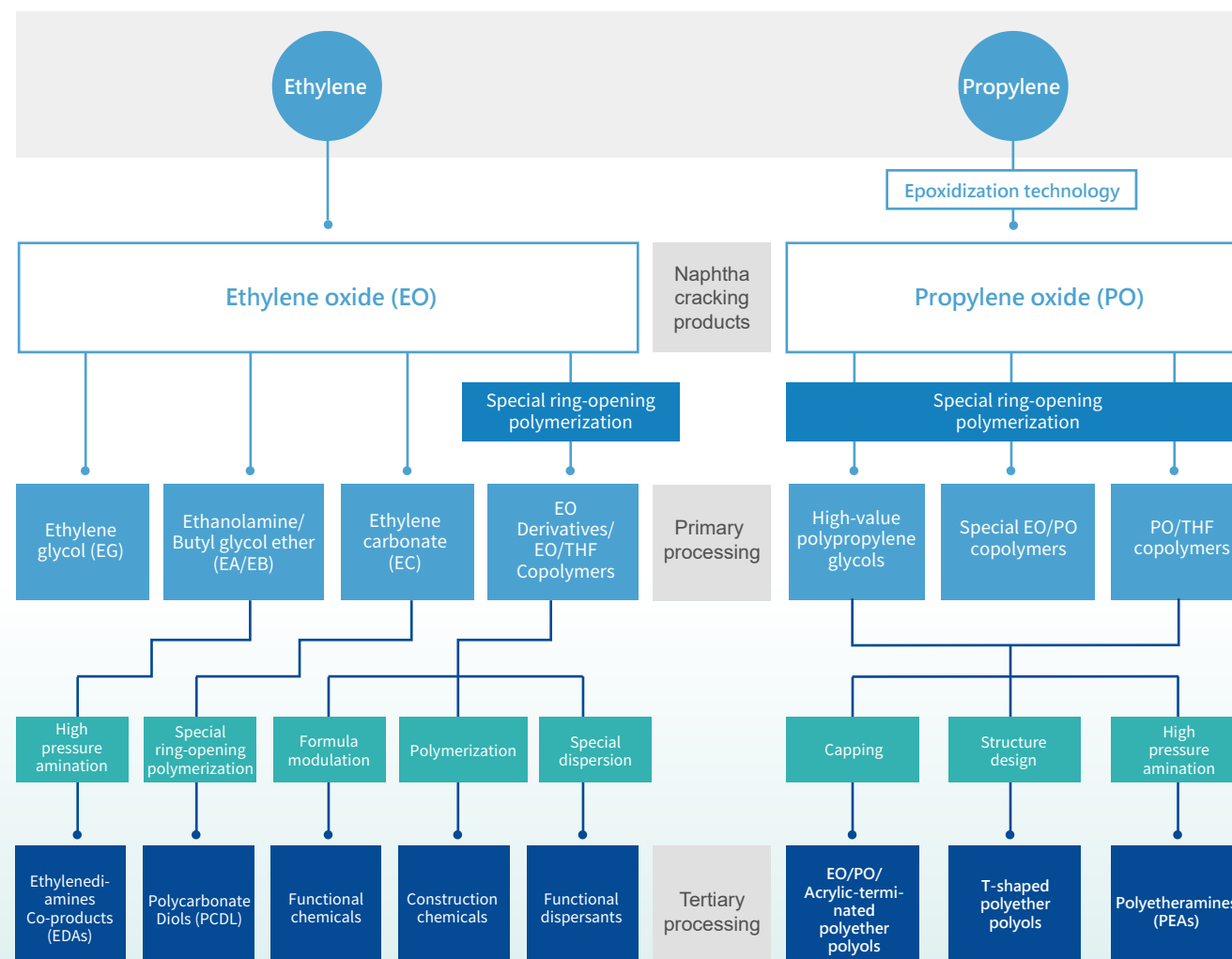
- Become the helmsperson in the petrochemical and specialty chemical businesses, accelerate the development of core technologies and high value-added new products to enhance the competitive advantage in the industry.
- Increase domestic and international exchanges, and strive for multi-developments in specialty chemicals, biodegradable polymer materials, and medical biotechnology, to create new value in the industry.
- Nurture talents, strengthen R&D capabilities, strive towards the enterprise of excellence.

With highly educated R&D team, OUCC invested in the high-tech research fields to expand core business applications, as well as to adapt to market changes and future development trends of the chemical materials in terms of new product development of diversified domains.

As to the R&D, in addition to the existing team, we have also established a new Product Development Department to accelerate the development of high value-added new products with the strongest configuration to strengthen our competitive edge and create new value.

New technology items for the ethylene product chain

Technology map for the propylene product chain



## R&D Performance

OUCC primarily focuses on the production of EG as its main product. Additionally, it actively develops specialized products to engage in diversified operations and mitigate product risks.

In recent years, the R&D has continued to develop high quality of customized EOD/POD products, in the midst of which PEGR1/PTGR1 products have the outstanding properties of yellowing resistance and non-explosive polymerization; surfactant products have excellent functions such as moisturization, penetration, emulsification, dispersion and cleansing. Other products can also be developed, according to customers requirements, into low foam, low pour point, low scent and biodegradable properties, which have been well commended by downstream customers.

More tailored products on the base of current foundation will be developed to provide customers, including:

- 01 In response to the 2050 net-zero carbon emission target, we are developing a range of carbon-captured products, which include environmentally-friendly products and technologies such as recycled materials, carbon capture agents, and biodegradable materials.
- 02 Successfully developed highly efficient water-reducing agents, slump-retaining agents, and additive formulations for precast concrete, which exhibit properties such as retarding, high flowability, strength enhancement, ash inhibition, heat suppression (for mass concrete), and foaming (for lightweight concrete.) These formulations, including PU functional modifiers, have been validated by numerous domestic and international customers.
- 03 Developed recycled polyester polyols (rPET,) which have been validated by customers, with a recycled material content using up to 50% PET recycled as raw material. These rPET products are combined with 20% recycled material from clothing-grade PU materials developed by the Far Eastern New Century Corporation.
- 04 Developed non-ionic surfactant products with 20wt% recycled PET content, high biodegradability (>95%), low foam, and cleaning functionality using recycled PET as raw material. These products have passed application tests in laundry balls. Compared to similar cleaning agents, they can reduce carbon footprint emissions by approximately 35%.

With the sustainable transformation undergoing currently, OUCC strives to produce high-valued fine chemicals, targeting at becoming a major producer that connects upstream petrochemical raw materials with downstream high-value fine chemical products. Additionally, OUCC is expanding its product chain apart from ethylene by utilizing a series of advanced processing technologies to enhance the application of its core products to capture a larger market share in innovative applications.

## Innovative Technology

Name of Technology	Description	Progress in 2022
EO/PO derivatives synthesis technology	<ol style="list-style-type: none"><li>1. EO/PO/EC ring-opening technique</li><li>2. EO/PO/THF ring-opening technique</li><li>3. Free radical polymerization technique</li><li>4. Esterification/transesterification/polyester technique</li></ol>	<ul style="list-style-type: none"><li>● EO/PO copolyether for water-based PU dispersion (WPUD) additives/resin modification.</li><li>● Reactive grade monomer for PU/UV curing resin.</li><li>● Products used in textile/ pesticide to aid emulsification/dispersion.</li><li>● Stable production of polycarboxylate superplasticizer series with better performance.</li><li>● Developed environmentally-friendly detergent with recycled PET content.</li></ul>
EO/PO derivatives formulated modulation technology	The products can be widely applied to textile dyeing, agricultural chemicals, construction materials, electronic chemicals, personal & household cleaning, and all other fields.	Developed numerous formulated products for GGBS aids, hydration heat inhibitors for mass concrete, antifoaming defoamers, and essential oil emulsifiers.
Special ring-opening polymerization	Continue to establish the special ring-opening polymerization technology for the development of low-saturated, high molecular weight, high activity and high valued polyether polyols, applying to the resin products of high or special spec's.	<ul style="list-style-type: none"><li>● Special polyols: PEG138 and more.</li><li>● PU formula application: DU031 and more.</li><li>● Plating lotion formula: EDH692.</li><li>● Cement additives: DEIPA85 and more.</li></ul>
Catalysis and process technologies, and product development required for polyetheramine (PEA)	Establish the catalysis and process technologies required for the mass production of PEA, and continue developing various PEA series, to be used in wind blades, waterproof and anti-corrosion coatings, and high-strength, wear-resistant, and weather-resistant structures.	Completion of the construction of a production facility with an annual capacity of 6,000-8,000 MT and start trial production.



Name of Technology	Description	Progress in 2022
Catalysis and process technologies of amination required for ethylenediamine series	Establish the catalysis and process technologies required for the production of ethylenediamine, and build a mass production plant for the output of related products.	Completion of the construction of a production facility with an annual capacity of 20,000 MT and start trial production.
Develop reprocessing technology for ethylenediamine products	Establish series products of N-hydroxyethyl-2-imidazolidinone, surfactant and ethylene bis-stearamide that are used in coatings, adhesives, hydrophilic modifiers, daily detergent, plastic processing lubricants, and other fields.	Development ongoing.
Mass production technology and new product development of polycarbonate diol (PCDL)	Establish technology suitable for mass production of PCDL and relevant product development. The PCDL series can be applied to the composition of soft segments in the molecular structure of polyurethane (PU) to improve the flexibility and toughness of PU.	<ul style="list-style-type: none"><li>● The PCH201 has passed downstream verification and has been successfully mass-produced.</li><li>● New development of formula application / textile auxiliaries for PU.</li></ul>
Alkylation Technology of Ethanolamine	Establish N-methyldiethanolamine products used in CO <sub>2</sub> capture, petrochemicals, textiles, pharmaceuticals, ink or paint, and other fields.	Development ongoing.
CO <sub>2</sub> Embedding Technology	The development of a synthesis technology that directly embeds CO <sub>2</sub> into the polyol structure to improve functionality as well as achieve the goal of CO <sub>2</sub> capture and utilization (CCU).	Development ongoing.
Product development of recycled polyethylene terephthalate (rPET)	Continue to develop a variety of rPET items to be used as raw materials for packaging, sound and thermal insulation, panels, and insulation.	<ul style="list-style-type: none"><li>● We have passed the downstream PU waterproof and moisture-permeable mold application verification and applied for the related patents and GRS certifications.</li><li>● Newly developed materials for fireproof insulation / PU formulation applications with recycled polyol contained.</li></ul>
Diethylene Glycol Amination Technology Development	Develop the Diethylene Glycolamine (DGA), Morpholine, and Bisamine Ethyl Ether (BAEE) items applicable to the adsorption/removal of H <sub>2</sub> S, COS, and CO <sub>2</sub> as well as selective solvents for aromatics in refineries, foam stabilizer preparation, wetting agents, emulsifiers, etc.	Development ongoing.
Selective hydrogenation technology development	Establish the reaction systems and proprietary technology.	Development ongoing.

## Innovative Product

Category	Subject	Contents
EOD/POD	Surfactants	<ul style="list-style-type: none"><li>● Downstream applications of EO/PO derivatives include nonionic surfactants, cement water-reducing agent, oil agent, detergent, and various intermediates.</li><li>● Development and application of fine chemicals, mainly covering plastic rubber, textile dyeing, coatings, pesticides, electronic semiconductors, metal processing, building construction and daily chemicals.</li></ul>
	Refined MPEG/PEG	<ul style="list-style-type: none"><li>● Used in polyurethane (PU) processing. This polymer material is widely used in adhesives, coatings, low-speed tires, washers, and car mats.</li><li>● PU is also used in the manufacture of a variety of foams and plastic sponges for household use.</li></ul>
	EO/PO/THF Copolymers	<ul style="list-style-type: none"><li>● Copolymers are mainly used to adjust the physical properties of PU such as flexibility, hydrophilicity/hydrophobicity, moisture permeability, dyeing affinity and low-temperature elasticity.</li><li>● The products are mostly made into waterproof air-permeated fabrics or used in products such as clothing, functional sportswear/footwear, furniture, etc.</li></ul>
EOD/POD Derivatives	Concrete admixtures	<ul style="list-style-type: none"><li>● Concrete admixture is a substance which when added to a concrete mix improves the properties of the concrete.</li><li>● Polycarboxylate Superplasticizer as a cement water-reducing agent helps to reduce water consumption and improve the strength of the concrete. Also, the admixture will reduce cement consumption while workability and strength maintained.</li><li>● Heat suppression agents for mass concrete: Addressing various quality and engineering durability issues associated with temperature control in mass concrete.</li><li>● Grinding aids for cement/slag: Functionality that reduces production energy consumption and enhances product strength.</li></ul>

Category	Subject	Contents
EOD/POD Derivatives	Daily chemicals/ industrial detergents	<ul style="list-style-type: none"><li>● Develop daily chemical agents with hydrophilic and soft, moisture-absorbing and quick-drying, antibacterial and anti-mite, such as fabric protection lotions, and zinc oxide antibacterial detergents.</li><li>● Develop low foam, high efficiency surface cleaners for metals and recyclable plastics.</li></ul>
	Dyeing and finishing auxiliaries	<ul style="list-style-type: none"><li>● Develop functional agents such as scouring, soaping, reduction, dye dispersion, and hydrophilic softening for post-finishing in textile dyeing processes.</li></ul>
	Ingredients of functional surfactants	<ul style="list-style-type: none"><li>● Non-ionic emulsifiers to be used in herbicides, insecticides, mineral oil, silicone oil, etc.</li><li>● Inorganic powder (e.g., carbon composites, TiO<sub>2</sub>) and dye dispersants.</li><li>● Silicon contained anti-foaming agents, water/oil repellents and agriculture spreading agents.</li><li>● Demulsifiers for crude oil and latex.</li></ul>
Polyetheramine	Monoamines, diamines, polyamines and polyetheramine derivatives	<ul style="list-style-type: none"><li>● OUCC is the only owner of the technology for amination of polyether polyol, which retains the excellent properties such as low viscosity, high permeability, anti-yellowing and heat resistance.</li><li>● They are used in high-performance composite materials, polyurea, waterproof and anti-corrosion coatings, anti-scratch and weather-resistant materials, for high-strength structures such as wind turbine blades, dams, bridge piers, etc.</li><li>● Achieve the goal of localization and domestic production of key raw materials.</li></ul>
Ethylenediamine	Ethylenediamine, diethylenetriamine, triethylene tetramine, aminoethylethanolamine, piperazine and related co-products	<ul style="list-style-type: none"><li>● OUCC is the only owner of the technology for amination of ethanolamine, and its co-products applicable to bleach activator, chelating agent, corrosion inhibitor, etc.</li></ul>
PU Raw Materials	EOPO polyether polyols of special spec's	<ul style="list-style-type: none"><li>● All series of polyether polyols have the properties of low degree of unsaturation, low VOC and uniform molecular weight properties.</li><li>● They can be used in waterproof air-permeated fabrics, adhesives, sealants, and all sorts of PU resins, to improve the quality and physical properties of the products.</li></ul>
	Polycarbonate diols (PCDL)	<ul style="list-style-type: none"><li>● Polycarbonate Diols (PCDL) are useful to improve the softness and resilience of PU and have better performance in many aspects such as hydrolysis resistance, heat resistance, weather resistance and oxidative degradation resistance, and are commonly used as soft segment modifiers to adjust the physical properties of PU products.</li></ul>
Green materials	Recycled PET/rPET	<ul style="list-style-type: none"><li>● Products with high recyclability (recycled content &gt;50%)</li><li>● Suitable for applications in soundproofing/ insulation/anti-static materials, panels, construction fillers, and special PU materials, etc.</li></ul>

## R&D Investment

OUCC adheres to the concept of sustainable innovation, increases investment in innovation, research and development year by year, and actively seeks strategic cooperation with internationally renowned companies to develop customized products with innovative technologies to meet the needs of our customers.

We invest corporate resources and cooperates with relevant R&D units to carry out various research technologies and create a new pattern of green fine chemicals. The annual investment deduction project has also been approved by the government (with total investment subsidy NT\$10 million in 2022,) a milestone of gradual development towards the high value-added industries.

Items	Unit	2020	2021	2022
R&D amount	Million (NT\$)	150	157	157
Total annual revenue	Million (NT\$)	9,799	14,674	12,770
Ratio	%	1.5308	1.0699	1.2294

Note: Individual operating income





## 2022 R&amp;D Collaborations

Category	Research Program/Unit	Description
Equipment	Potentiometric Titrator for EG and EC Plant Analysis	Utilized in EG and other factories for raw material inspection (NaOH / H <sub>2</sub> SO <sub>4</sub> / NaOCl / acetic acid / phosphorous acid/sodium methoxide / KOH) and TAV analysis.
	Ultraviolet (UV) spectrometer for water quality analysis of EG plant/public area	Reduced workload issues and minimized the derivation caused by the instability of the sensitive analytical items of iron and aldehyde.
	5 units of GC for analysis of produced EB, MEA/DEA, TB, and various RD products	Implement continuous process products and low-boiling point effluents for RD products, and deal with the large variability sample analysis in RD units.
Industry-academia cooperation	Performance Verification and Promotion Plan of Hydration Heat Inhibitors for Mass Concrete	Evaluate the contribution of the project cost and construction timetable of the mass concrete that employs hydration heat-controlling agents. Host expert symposiums and publish research results in professional journals to achieve publicity and promotion.
	Direct synthesis of $\beta$ -propiolactone from epoxide and carbon monoxide.	The CO <sub>2</sub> generated in the process is captured and converted into synthesis gas and then reacted with EO or PO to produce $\beta$ -propiolactone. The $\beta$ -propiolactone can then be processed and derived into the methacrylic acid used by acrylic plastic, fulfilling the carbon emission reduction through CCU.

Taiwan's First  
Reductive  
Amination Process  
Invented

Deeply engaged in specialty chemicals, OUCC has been the one & only in Taiwan and the rare in Asia, with "reductive amination technology" and production capabilities. We respond to the government's policy of domestic sourcing and localization of key raw materials by producing materials used in high-end composite applications such as wind turbine blades, yachts, waterproof and anti-corrosion coatings, durable and weather-resistant building structures. These materials also have carbon reduction capabilities.

**Reductive amination technology :**

This technology has been confirmed to have commercial value as the plant construction completed in 2022 for mass production. The planned product lines for polyetheramines include monoamines (MA series), diamines (DA series), and triamines. The total estimated annual production capacity is 6,000 MT.

**Reductive amination technology for alcohol amine molecules:**

This technology includes the development of proprietary catalysts, establishment of production and process conditions, and the production of related products such as ethylenediamine, diethylenetriamine, triethylenetetramine, aminoethylethanolamine, and piperazine. The total estimated annual production capacity is 20,000 MT.

With no full calibre and technology for the PO production domestically, the PO market demand depends on imports. In response to this, OUCC has exerted its innovative R&D ability to develop four independent catalyst-related technologies, applied for multi-national patents, as well as passed the inspection and gained certifications of Taiwan and the United States.

In addition to its excellent catalytic activity (CHP conversion >99%, PO selectivity >97%), the production process and recycling procedures are more streamlined and require simpler equipment, which result in a significant production cost down, in comparison with the key suppliers in Japan.

**Innovative  
Technology**

Global Patent - Cumyl-Pydroperoxide Propylene-Oxide (CHPPO)

OUCC leverages sustainable and environmentally conscious design to actively explore innovative products that reduce energy consumption while achieving high value. We have successfully developed high-efficiency water-reducing agents, slump retainers, and functional additives with properties such as retardation and high flowability. These products can be widely used in the construction industry and are suitable for concrete applications in downstream formulation and precast plants.

· In 2022, we innovatively developed an environmentally-friendly detergent with 20wt% recycled PET content, low foaming, high biodegradability (>95%), and excellent cleaning ability. It has been tested in laundry ball products by downstream customers, and initial estimates suggest that this product can reduce carbon emissions by approximately 35% compared to AEO with the same cleaning function.

· We have also successfully developed and mass-produced a series of specialty detergents with special features such as hydrophilicity, softness, quick-drying, antibacterial & anti-mite properties, as well as cooling sensation. These products bring high-value fine chemicals into daily life and create additional application value.

**Innovation in  
Environmental  
and Industrial  
Applications**

In 2022, the new EOD II plant (zone 700) completed its construction and started production. OUCC has successfully developed and achieved stable production of WR04, a high-performance water-reducing agent. This product has been validated and well-received by customers both domestically and internationally, and its shipment volume and market share are gradually increasing.

We also successfully developed a range of formulated products, including GGBS aids, hydration heat inhibitors for mass concrete, defoamers with foam control properties, and emulsifiers for essential oils.

**Development  
of High-valued  
Specialty  
Chemicals****Respect Intellectual Property Rights**

OUCC recognizes the importance of protecting intellectual property rights and has established a comprehensive and robust mechanism for intellectual property protection. We are committed to safeguarding our innovative technologies and intellectual property.

To protect the acquired patent technologies, OUCC has established the "External Procurement Process Technology Document Management Procedure" to ensure the research and development and purchase of innovative technologies. In contracts, we include provisions for patent rights, copyrights, intellectual property rights, and confidentiality clauses to ensure the integrity of our technological rights. This strengthens our competitive advantage in existing products and enhances the long-term competitiveness of the company.

Furthermore, we enforce strict internal oversight and provide education to employees on intellectual property rights. We conduct training and education related to intellectual property rights to enhance employees' perception of intellectual property protection. This helps prevent improper use or disclosure of the company's intellectual property.



## Green Chemical and Smart Manufacturing



OUCG is dedicated to the R&D of green chemistry technologies. It holds the belief of smart manufacturing and drives the transformation of chemical industry with the help of environmentally friendly practices and technologies. Envisioning the sustainable development of chemical industry, OUCG has adopted the "stable, safe and environmentally-friendly" approach for product development. The possible risks for human health, safety and the environment are assessed based on the concept of product life cycle. The goals are to reduce risks, establish and promote green chemistry strategies and actions.

### "Green Chemical and Smart Manufacturing" Promotion Strategy

- Green and Innovative R&D:**  
Innovative technology development must meet the requirements of environmental protection agency, and encourage the research and development unit to make efforts to reduce resource consumption from an environmentally-friendly perspective.
  - Development and design stage :  
Remove toxic substances from the environment and avoid residual substances in products or polluting the environment.
  - Production stage :  
Reduce the loss of energy and resources and the emission of harmful substances.
  - Product inspection :  
For newly developed and produced products, we conduct third-party inspection in accordance with customer's specifications.
- Process technology in compliance with regulations:**  
purchased technologies are those already developed in compliance with the relevant regulatory requirements.
- Promote smart logistics and services:**  
Build a real-time database system(PI) actively incorporate new elements of "Internet of Things" information, and implement smart logistics and services.
- Cultivate AI management talents:**  
Cultivate a new generation of AI management talents and create new value.



### Self-developed Operational Intelligence System

Being keen on digital transformation, OUCG is developing its own Operational Intelligence System. This simple, visualized cloud platform provides statistical data to the managers in all operational units to facilitate their decision making.

This powerful Operational Intelligence System helps the management and employees with no information background to benefit as well from learning. Decision making can be carried out effectively and reliably even without the assistance from IT department, marking a milestone for its digital transformation.

### Improving Customer Services with IoT

Take liquefied gas for example, OUCG is strongly promoting its Smart Logistics and Services. The storage tank monitoring system installed at the customer site is capable of analyzing the usage status in real time. Automated delivery scheduling is implemented using AI technologies and big data, providing the customers with thoughtful and expeditious services.

To cultivate AI workforce for chemical industry, OUCG has selected its employees for training at the Taiwan AI Academy, in the hope of combining theory and practical knowledge, as well as bringing back solutions through the interaction and experience exchange with the people within the industry. Other benefits include improving operational efficiency with AI technologies, lowering production risks and creating new values of smart manufacturing.

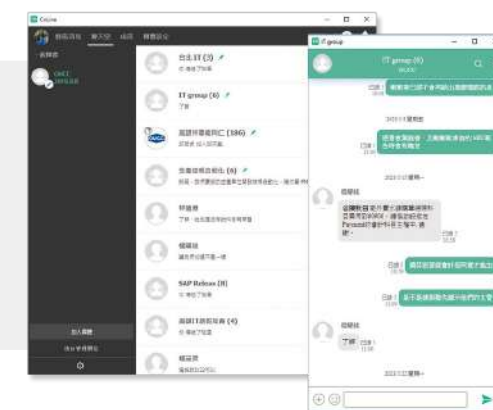
### Curbing The Spread of Covid-19 Pandemic Using Technologies

Developed by OUCG, the Enterprise Information Platform (EIP) can be accessed via computers and smartphones. Its features include employees attendance recording, document managing system, digital bulletin board, healthcare, etc. This Platform is helpful in reducing the in-person contact and minimizing transmission risks.

In particular, the "Health Care System" has been instrumental in enabling OUCG to track and safeguard the health of employees during the pandemic. Additionally, by fully digitizing administrative forms, a total of 57,927 documents were processed using electronic workflows in 2022, resulting in significant carbon emission reduction benefits. Furthermore, during the pandemic, OUCG actively promoted the work-from-home mechanism and leveraged technology to reduce employee commuting and business travel (with 2,000 hours of video conferencing in 2022.) This not only protected the health of employees but also contributed to energy-saving and carbon reduction efforts.

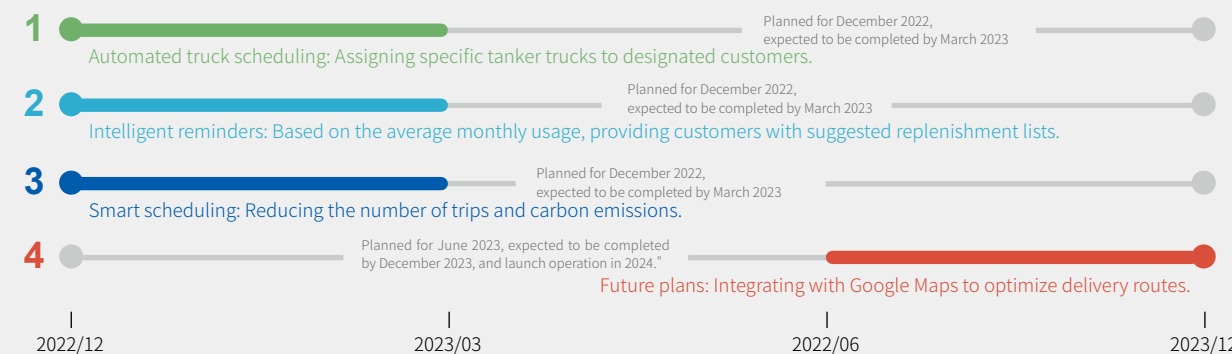
### Internal Communication Tool - Coline

To prepare for digital transformation, OUCG introduced the collaboration tool Coline in 2021. The employees are able to work and communicate in real time using this platform. It is helpful in reducing in-person contacts and minimizing the transmission risks during the severe Covid-19 pandemic.



### Gas Delivery - Smart Dispatching

OUCG has started using its Smart Dispatching System since 2022. The customers' demands are estimated through big data and AI simulation, based on their types and amounts of consumption. The dispatcher then makes decision according to such estimations in order to shorten delivery time and avoid supply interruption.





# Chapter. 02

## ETHICAL GOVERNANCE

**The** "Integrity and morality" is the enterprise's foundation for sustainable operation. OUCC adheres to the principles of integrity and transparency, and demonstrates the highest ethical standards to internal employees, shareholders, customers, and all stakeholders related to the Company. Such perseverance not only helps to keep the Company running smoothly, its adherence to corporate governance concepts also helps to maintain the trust of consumers and shareholders.

With the established sound corporate governance system, OUCC formulated policies such as the "Best Practice Principles," "Reporting and Punishment Measures for Violations of the Code of Ethical Conduct and Best Business Practice," as well as the sound risk management system to comprehensively monitor the supply chain and market development, to ensure all operations' legality and ethical compliance for the corporate governance implementation.



**2022**  
Sustainable  
Performance

- Conducted performance evaluation of the Board of Directors, and the assessment results indicated "**overall good**"
- Annual operating income of NT\$**12.77** billion
- Continue to strengthen the information security mechanism with **Business Continuity Planning (BCP)**
- OUCC was ranked among the top **6~20%** of listed companies in the Corporate Governance Evaluation conducted by TWSE



## About OUCC



Head office : 13F, No. 101, Fu-Hsing N. Road, Taipei City

Telephone : (02) 2719-3333

Factory : No. 3, Industrial 3rd Road, Linyuan District, Kaohsiung City

Telephone : (07) 641-3101

Number of employees : 365

Manufacturing location : Kaohsiung & Yangzhou

Note: The OUCC production base for joint venture locates in Yangzhou, China.

Established in 1975, OUCC is the key player of the Far Eastern Group's petrochemical energy business. The company was listed in TWSE since 1987 (stock code 1710, of capital of 8.86 billion NTD.) The company owns two production sites located in Kaohsiung and Juangsu, China.

The OUCC has been producing ethylene oxide (EO) and ethylene glycol (EG) related products for more than four decades, as a major supplier of EG and EO derivative petrochemical products in Taiwan and the Asia-Pacific region.

Product	Plants	Annual Production Capacity (1,000 tons)
EG	Linyuan	348
	Yangzhou	399
GAS	Linyuan	686
	Yangzhou	304
Specialty Chemicals	Linyuan	147
	Yangzhou	39

Note: Please refer to 2022 Annual Report p.82 for the production value in the past 2 years.



## The Sustainable Development Philosophy of OUCC

With the goal of sustainable operation, OUCC builds a sustainable development organization, systematically plans and implements various sustainable strategies and actions, and sets annual qualitative and quantitative performance evaluation indicators to ensure that the sustainable plan is duly implemented.



- Committed to improving process design, pursuing green production, minimizing the impact of operating production on the environment, and implementing balanced development of industrial production and environmental protection.
- OUCC has implemented the ISO 14001 Environmental Management System in 1998, actively promoting various pollution prevention improvements and striving to reduce the risk of pollutant emissions.
- OUCC introduced the ISO 50001 Energy Management System for energy saving. Through innovative R&D, the circular economy model was integrated to reduce energy usage.



- OUCC values the importance of industrial safety & health and human rights, obtains ISO 45001:2018 certificate to build a friendly and safe working environment.
- The Linyuan Plant was awarded the recognition of "5 Million Accident-Free Man-Hours Record," and continues to progress towards the goal of a safe environment and a healthy workplace.
- OUCC adheres to the core spirit of the "Universal Declaration of Human Rights," the "ILO Declaration," and "The United Nations Global Compact" and "Responsible Business Alliance Code of Conduct." We abide strictly by all labor-related laws and regulations. The company has also formulated internal labor-related rules and management mechanisms to achieve equality and create a friendly working environment.



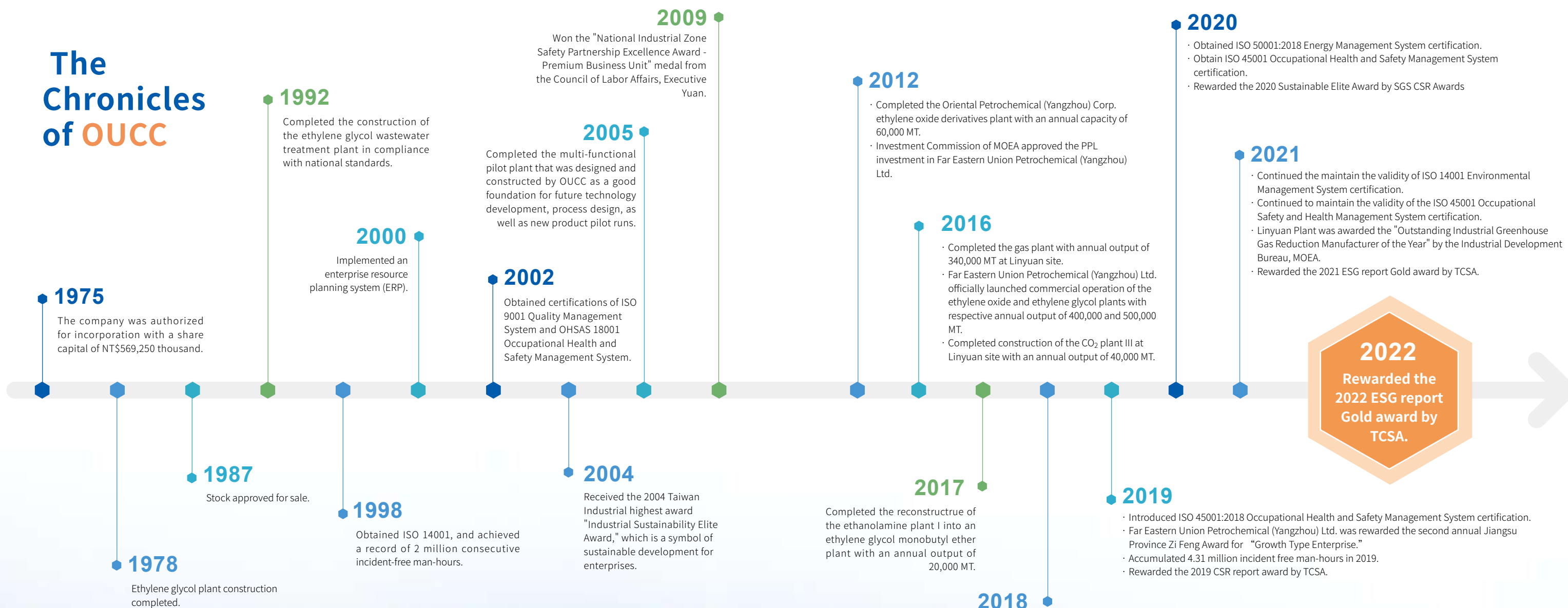
- In addition to pursuing economic stability, OUCC continues to integrate and develop core competencies, actively seeks potential cooperation with global companies, and introduces the most advanced chemical and biochemical technologies with the aim of creating new profit potential.
- In view of corporate operative responsibility, the safeguard of shareholders' lawful rights as well as others stakeholders' interests, OUCC implements the robust governance, improves business operation to maximize shareholders' interests.
- For the continuous strengthening in corporate governance and management system, the corporate governance officer was installed, accountable for the tasks performing.
- Adherence to the OUCC spirit of entrepreneurship – "sincerity, diligence, thrift, prudence, and innovation" to steadily cope with future challenges and achieve sustainability.







# The Chronicles of OUCC





## Financial Performance

On account of the impacts caused by increasing ethylene glycol (EG) production capacity and shutdown inspection of oil refinery facilities, EG profit margin diminished as EG price dropping and raw material price hiking, which resulted in a balance between profit and loss for EG business. Specialty Chemicals and Gas, on the other hand, generated a record high revenues and earnings thanks to the implementation of high-value and green products strategies.

With its main operating principles focused on competitiveness improvement and high-valued products transformation, OUCC gained an operating income of NT\$12,770,275 thousand, a decrease of 13% compared to 2021, with the relentless efforts of all our colleagues. With net profits before and after tax of NT\$56,015 thousand and NT\$38,873 thousand respectively, a cash dividend NT\$ 0.2 per share is to be distributed with the approval of the Board.

Unit: NT\$ Thousand

	2020	2020	2022
Operating income	9,798,912	14,673,731	12,770,275
Operating cost	9,015,310	12,620,091	11,426,269
Staff salaries and benefits	406,712	503,147	448,810
Dividend paid to shareholders	265,711	-	619,992
Dividend paid to government	45,369	61,028	41,829
Community Investment	1,590	3,755	3,882
Economic value retained	64,220	1,485,710	229,493
Total debt	10,608,706	10,359,750	10,927,952
Total asset	22,712,675	23,232,530	22,918,839

Note: 1.The information above is obtained from unconsolidated financial report.  
2.Please refer to 2022 Annual Report p.82 for annual net sale and sale volume.  
3.Please refer to 2022 Annual Report p.62 for shareholder structure.

## Open and Transparent Communication Channel

The OUCC complies with the information disclosure regulations, and has diversified communication channels for all stakeholders, including:

- The suggestions or questions raised by the shareholders are dealt with by the President Office, also by the spokesperson and acting spokesperson of the company, or by the "Oriental Securities Corporation" that provides stock services to the OUCC. The investors meetings are held irregularly, with relevant information disclosed to the public.
- All the relevant information is on the MOPS and the Company website in accordance with government provisions and regulations.

- Company website : <https://www.oucc.com.tw>
- MOPS : <https://mops.twse.com.tw/mops/web/index>

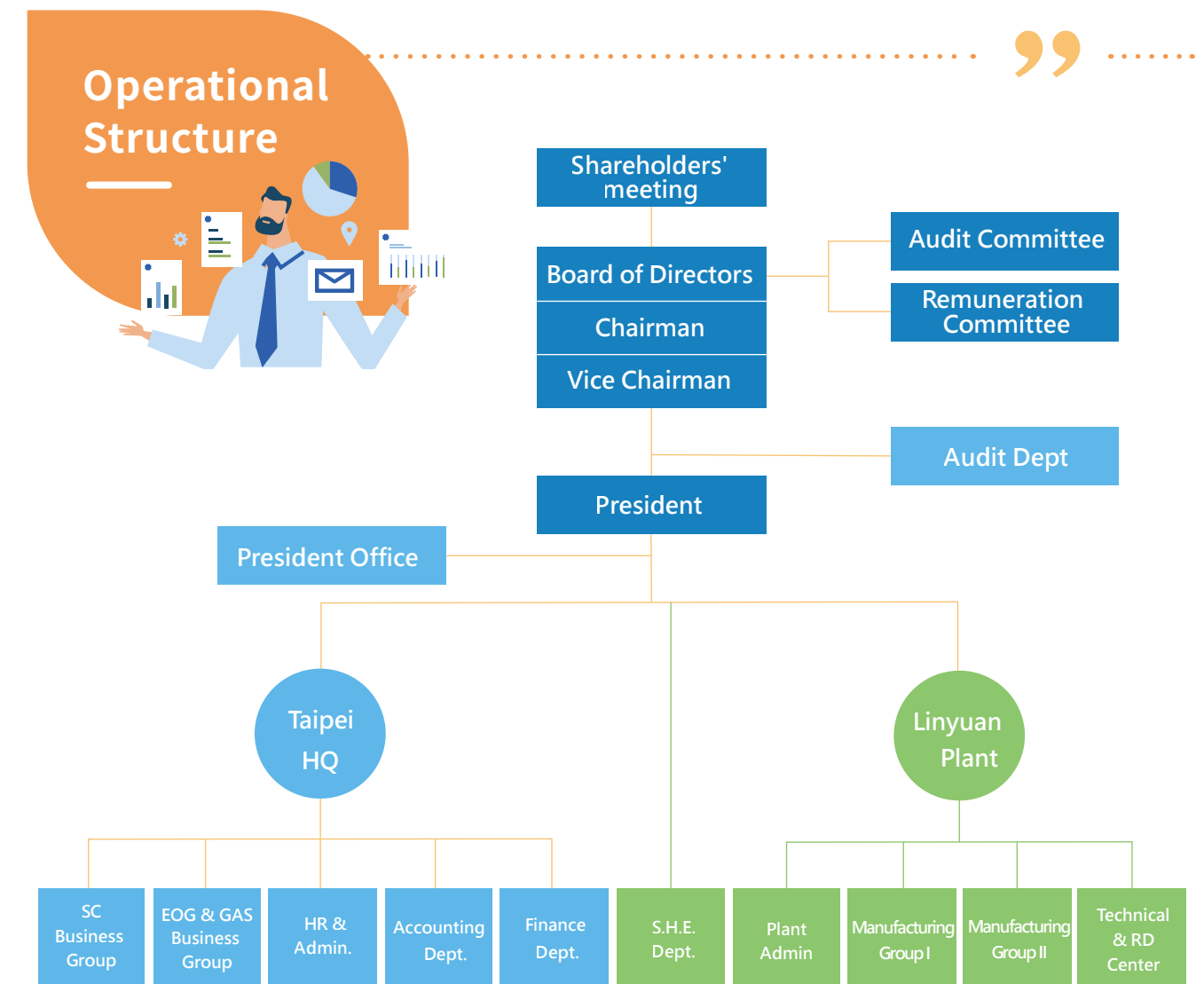


Company website



MOPS

Stakeholder	Contact	Communication Channels
Shareholders and Investors	Spokesperson Daniel Yu, Assistant VP	02-2719-3333
	Acting Spokesperson David Chiang, Senior Manager	02-2719-3333
	IR Director Jason Chen, Senior Manager	02-2719-3333
	Stock Services Oriental Securities Corporation	02-7753-1699
Employees	Ms. Chen	02-2719-3333#281
Suppliers/Contractors	Mr. Hsu	02-2719-3333#282
Business Clients	Mr. Chen	02-2719-3333#235

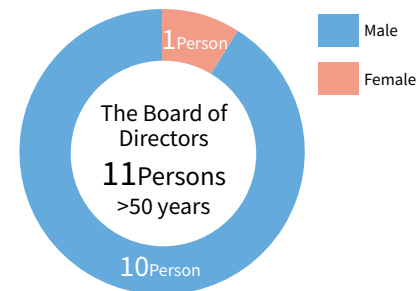






## Board

The Board of Directors is our highest organization, which consists of 11 Directors, including 3 Independent Directors. The Directors of OUCC all exercise their powers in accordance with the company law and the regulations. We have established the "Corporate Governance Principles," which is approved by the Board of Directors, and continue to strengthen all aspects and mechanisms of corporate governance, laying a solid foundation of OUCC's sustainable management.



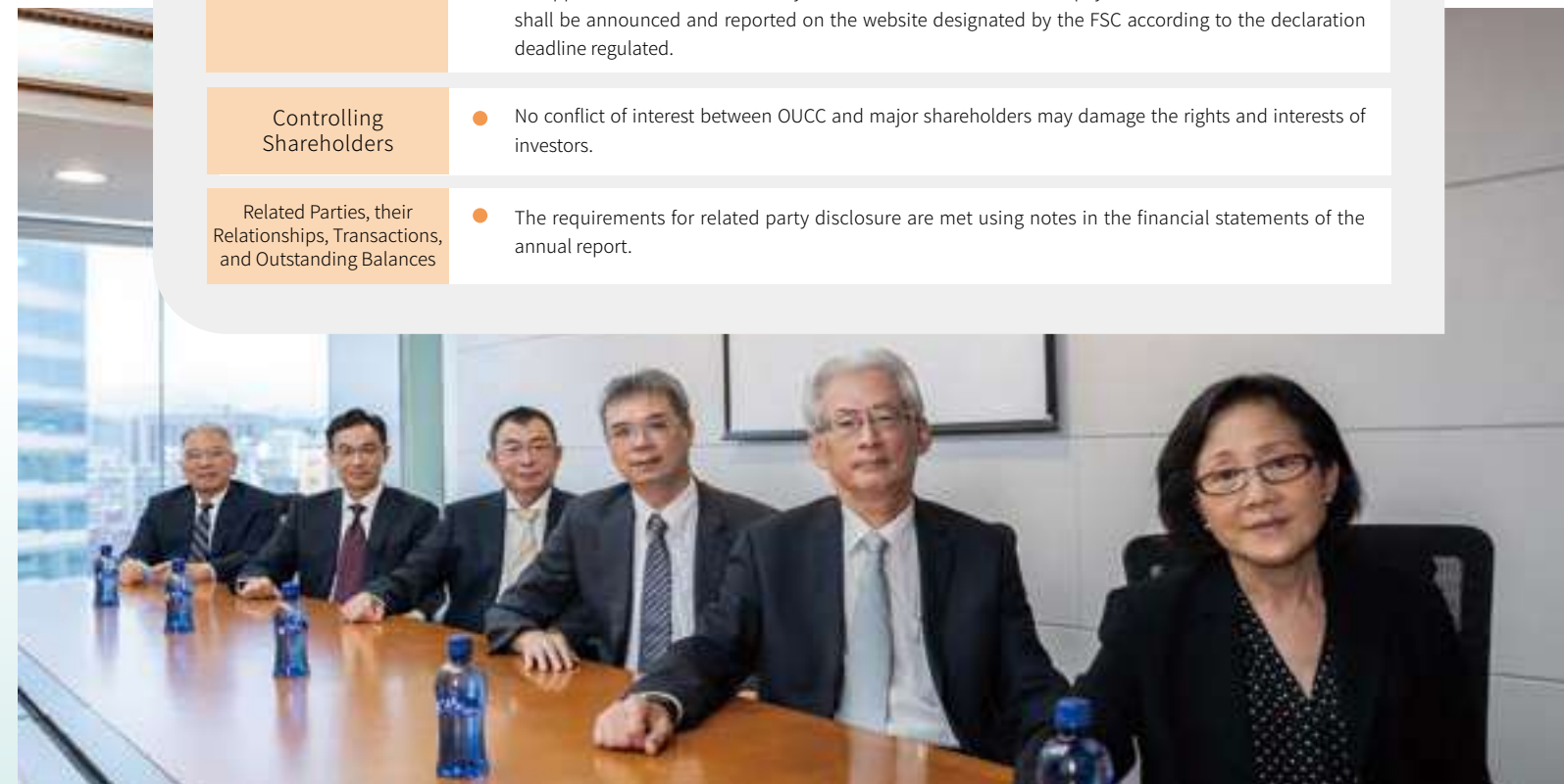
## Management of Conflicts of Interest

OUCC's Directors, Managers, and employees must operate in the firm's best interests to prevent conflicts of interest and implement conflicts of interest management for the Board of Directors according to regulations. Should any Directors, Managers, and other interested parties attending the Board of Directors meeting have a conflict of interest with the Board of Directors themselves or the legal person they represent, the said persons shall be excused from the meeting and refrain from participating in the discussion and voting.

- According to OUCC's "Code of Ethics," the Company's personnel must handle official duties objectively and efficiently. They shall not use their positions in the Company to gain improper benefits for themselves, spouse, parents, children, or relatives within the second degree of kinship.
- When OUCC has a fund loan or guarantee, a large asset transaction, or a purchase (sale) relationship with individuals mentioned in the preceding paragraph, the relevant Company personnel must take the initiative to explain whether they have potential conflicts of interest with the firm and resolve the issues according to the Company's code of conduct to prevent conflicts of interest.

Director Election	<ul style="list-style-type: none"><li>● The Director nomination and election are performed according to the candidate nomination system outlined in OUCC's "Corporate Governance Principles."</li><li>● The Directors are elected via the cumulative voting and candidate nomination systems, and the qualities of nominees are carefully reviewed according to the Company Act.</li><li>● In addition to evaluating each member's academic experience and strictly adhering to the "Election Procedures of the Board" and "Corporate Governance Principles," we also consider the Directors' diversity, independence, and stakeholder opinions during Director elections.</li></ul>
Member Capacity and Diversity	<ul style="list-style-type: none"><li>● The Board of Directors serves for a three-year term. A candidate nomination mechanism is used to select and nominate Board members, and the academic experience of the nominated candidates is also evaluated to ensure diversity, independence, and comprehensive consideration of stakeholders' opinions.</li><li>● All Directors are equipped with seasoned knowledge in business management, leadership decision-making, and related industries. Their academic experience includes law, finance, economics, and business.</li><li>● Regarding cultivating the collective knowledge of Directors, we have invited them to participate in continuing education courses such as sustainability/ESG according to Chapter 3 "Enhancing Directors' Functions" of the "Corporate Governance Principles." Directors also regularly attend external professional training courses on board operating methods, corporate governance research, and sustainable development concerns.</li></ul>
Performance Evaluation and Sustainability Management	<ul style="list-style-type: none"><li>● We regularly perform a Board of Directors performance evaluation, and the most recent results show "overall good."</li><li>● The OUCC's Board of Directors is the highest supervision unit for sustainable development. The Directors regularly review the sustainable development implementation results and future plans, and advocate for the strategic promotion of sustainable development.</li></ul>
Board of Director's meetings	<ul style="list-style-type: none"><li>● A total of 4 Board of Directors meetings were held to set management objectives for corporate sustainability management and strategies.</li></ul>
Professional Training Seminars	<ul style="list-style-type: none"><li>● Directors and Independent Directors of OUCC participated in external education and training courses including the Operational Practices of the Board of Directors and Corporate Governance Seminar, Operational Practices of the Audit Committee, and the like in 2022. (Please refer to page 48-49 of the 2022 Annual Report.)</li></ul>
Major Results	<ul style="list-style-type: none"><li>● Approval of OUCC's acquisition of the common shares of Oriental Petrochemical (Taiwan) Co., Ltd.</li><li>● Report to the Board on the Sustainable Development Management Mechanism and Operation Performance in 2021<ul style="list-style-type: none"><li>· Revise the "Corporate Sustainable Development Policy"</li><li>· Report on the "Greenhouse Gas Inventory and Verification Schedule Planning"</li><li>· Prepare the Sustainability Report and establish the "Risk Management Policy"</li></ul></li></ul> (Please refer to page 55 of the 2022 Annual Report.)

Board of Directors Cross-membership	<ul style="list-style-type: none"><li>● During the 5th meeting of the 16th term of Board of Directors, Director Eric Chueh's non-competition restriction to serve as the President of Oriental Petrochemical (Taiwan) Co., Ltd. was lifted, and Director Chueh shall practice voluntary recusal according to regulations.</li></ul>
Board of Directors Cross-membership	<ul style="list-style-type: none"><li>● The company has established the "Procedures for Acquisition and Disposal of Assets of OUCC," according to the "Regulations Governing the Acquisition and Disposal of Assets by Public Companies" promulgated by the FSC, identified the related parties according to the Regulations Governing the Preparation of Financial Reports by Securities Issuers, and published the list of related parties on its website.</li><li>● According to the "Procedures for Acquisition and Disposal of Assets of Oriental Union Chemical Corporation," if the transaction amount with a related party exceeds NT\$300 million, the relevant transaction information should be submitted to the Audit Committee prior to the Board of Directors for approval to ensure the stability of the transaction contract and payment. The relevant information shall be announced and reported on the website designated by the FSC according to the declaration deadline regulated.</li></ul>
Controlling Shareholders	<ul style="list-style-type: none"><li>● No conflict of interest between OUCC and major shareholders may damage the rights and interests of investors.</li></ul>
Related Parties, their Relationships, Transactions, and Outstanding Balances	<ul style="list-style-type: none"><li>● The requirements for related party disclosure are met using notes in the financial statements of the annual report.</li></ul>





## Remuneration Management

Item	Highest Governance Body (Board of Directors)	Senior Executives
Fixed and Variable Payrolls	<ol style="list-style-type: none"><li>According to the provisions provided by the Company Act and the Company's articles of incorporation, no more than 1% shall be allocated as Director's remuneration if there is any profit at the end of the fiscal year.</li><li>The Board of Directors shall determine the actual distribution ratio and amount for Directors' remuneration and report to the shareholders' meeting. Independent Directors receive fixed remuneration.</li><li>The process for Director remuneration evaluation is to determine fair compensation according to the findings of the "Board Performance Evaluation Rules." The Remuneration Committee and the Board of Directors review relevant performance appraisals and remuneration rationality, and the remuneration system is reviewed at any time depending on the actual operating conditions and relevant laws and regulations to balance the Company's sustainable operation and risk control.</li></ol>	<ol style="list-style-type: none"><li>According to the provisions provided by the Company Act and the Company's Articles of Incorporation, 1% to 2% shall be allocated as employee remuneration if there is any profit in the year.</li><li>Employee remuneration can be stock or cash, and the actual distribution ratio, amount, and number of shares issued shall be determined via a resolution adopted by a majority vote at a meeting attended by over two-thirds of the Directors. A report of such distribution must also be presented at the shareholders' meeting.</li><li>The remuneration standards, structure, and system for the President, Vice Presidents, and Managers will be reviewed and adjusted promptly depending on the operating conditions and relevant laws and regulations changes. It is mainly determined based on job duties, personal performance achievement rate, and contribution to company performance as well as factors such as the overall environment, business environment risks, and market standards. Work performance remuneration is related to the Company's business performance.</li></ol>
Separation Payment	There is an appointment relationship between the members of the Board of Directors and the company, and there are no conditions for resignation/retirement/benefits and other severance payments.	For senior managers subject to labor-employment relationships, the separation payment shall be handled according to the relevant provisions of the Labor Standards Act.
Retirement Benefits	Not applicable	For senior managerial officers subject to labor-employment relationships, the retirement benefit plan applies to all employees according to the relevant provisions of the Labor Standards Act or the Company's retirement regulations.

Item	2021	2022	Increase/Decrease ratio of 2022
Annual total compensation ratio	4.68	4.37	1.83

Note: The annual total compensation ratio : Annual total compensation for the organization's highest paid-individual / Median annual total compensation for all of the organization's employees

## Remuneration Link to ESG Indicators

OUCC has a Remuneration Committee tasked with assisting the Board of Directors in formulating remuneration-related policies, systems, and reviewing the performance assessment of Directors and Managers. The Committee is chaired by an Independent Director and held a total of two meetings in 2022, with 100% attendance rate of committee members.

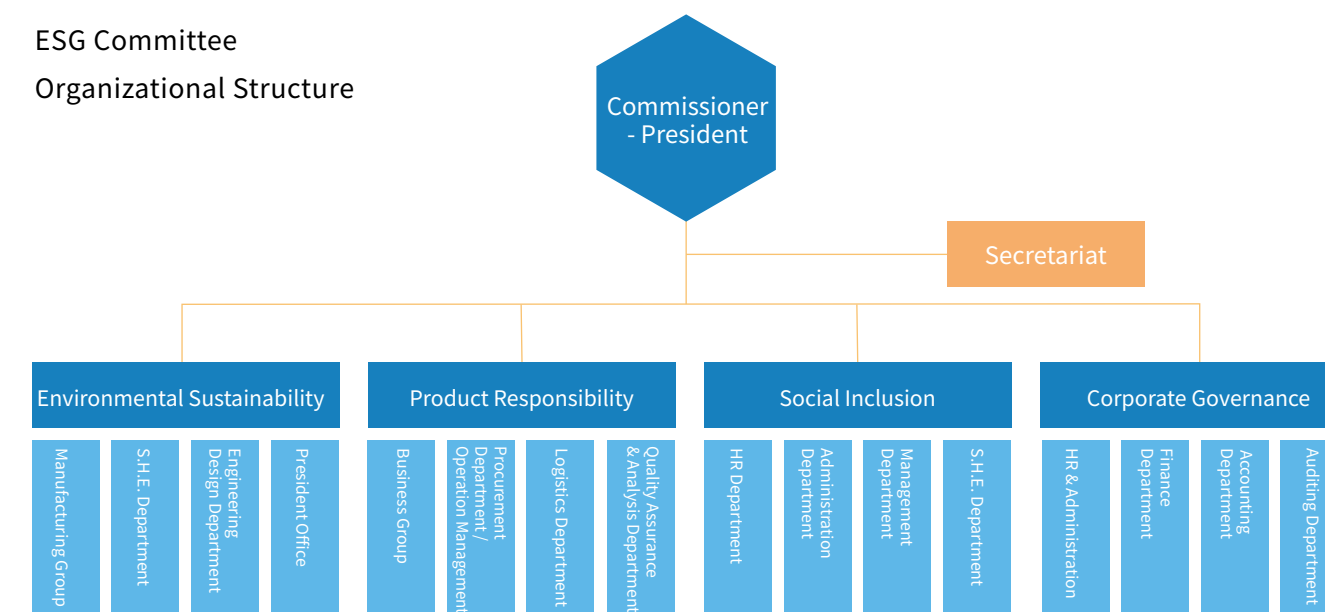
The process for determining Director remuneration follows the "Board Performance Evaluation Rules for Oriental Union Chemical Corporation." It assesses operation performance, future business risks in the industry, ESG project execution performance and results, and sustainable business strategy goals, taking into consideration of individual performance achievement rate and his/her contribution to the company's performance to provide reasonable compensation. The performance evaluation and reasonableness of remuneration are reviewed by the Committee and the Board of Directors. The remuneration system is periodically reviewed based on actual operating conditions and relevant laws and regulations to achieve a balance between sustainable business operations and risk management.

## ESG Committee

In order to effectively coordinate and manage various ESG affairs, OUCC established " ESG Committee." The President was regularly appointed as the Commissioner responsible for final decision making, action plan review, and approval of the final reports (e.g. ESG, TCFD, SASB.) The Secretariat under the Committee is accountable for the organization and promotion of the task execution of each department, and report periodically to the Board of such progression status.

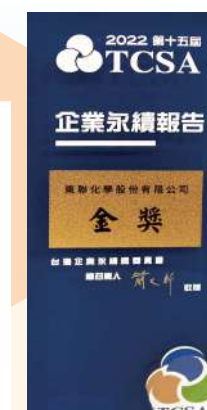
- **Committee structure:** Department heads serve as steering committee members, and senior managers are responsible for the committee's operations, formulating relevant ESG policies, action plans, and cross-departmental coordination.
- **Supervision and management responsibility of the Board of Directors:** The Board of Directors is the highest management unit for sustainable development. It regularly reviews the sustainable development implementation results and future plans and assigns the "ESG Committee" to coordinate the review and management of sustainable action plans. The Commissioner (also a representative of the Board of Directors) regularly summarizes the implementation progress and reports to the Board of Directors.
- **Meeting convention:** If there are specific ESG issues in the current year, unscheduled meetings will be held to ensure that ESG issues are discussed and addressed as soon as possible, and the management process, evaluation results, and overall ESG information will be shared with the stakeholders via the ESG website and other communication channels. The goal is to maintain good interaction and negotiation relationships with multiple stakeholders.

## ESG Committee Organizational Structure



## OUCC Received the 2021 "Taiwan Corporate Sustainability Award"

With the effective implementation of sustainable actions and enhanced information disclosure, OUCC was recognized and rewarded the TCSA Taiwan Corporate Sustainability Award in 2022.







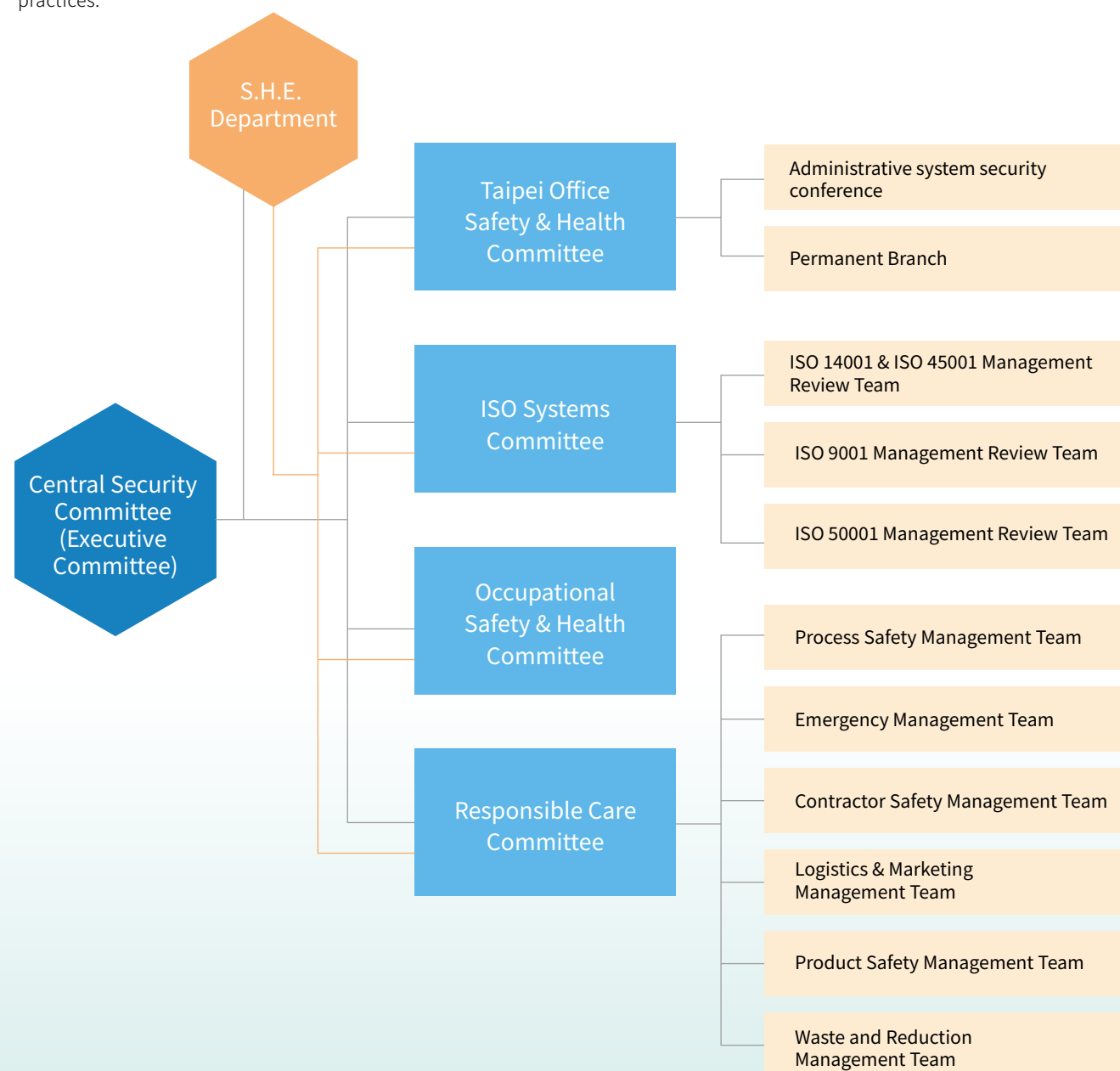
## Risk Management



OUCC places great emphasis on risk management and has established a robust "Risk Management Organization" with committees at various levels. These committees are integrated into the company's core business strategy and decision-making processes. We employ a comprehensive approach to identify, assess, and manage various risks to ensure the protection of the company's operational activities and the interests of stakeholders.

”

For critical operational issues and risks, we conduct systematic evaluations and analyses. We implement relevant management systems, develop well-defined risk strategies and actions, and integrate them with sound operational management practices. This ensures a balance between business operations and risk management, establishing a solid foundation for sustainable business practices.



## 01 Counter - measures for Asset Risk

- **Property risk assessment:** Every year, we appoint external professional consultants to assess property risks together with factory employees, propose improvement plans and introduce damage prevention technologies to reduce property losses.
- **Insurance planning:** The transfer of unavoidable, uncontrollable risks and force majeure by the acquisition of the necessary insurance.
- OUCC has purchased a blanket insurance policy for all property at replacement, added business interruption insurance, as well as project insurance for the sake of safety progress and trial run risk.



## 02 Counter - measures for Accounts Receivable Risk

- OUCC has established a Credit Committee to regularly examine the customer's sales credit and accounts receivables.
- To reach the annual management objective of "Zero Bad Debt," the overdue receivables are reviewed monthly.



## 03 Counter - measures for Interest Rate Risk

- OUCC has been able to reduce the impact of rising interest rates on the Company's financing costs by locking in medium to long-term interest rates and planning fixed-rate financing instruments.
- OUCC continues to observe the changes in interest rates and engage in short-term and long-term financial planning to reduce overall capital cost.



Risk Management Mechanism

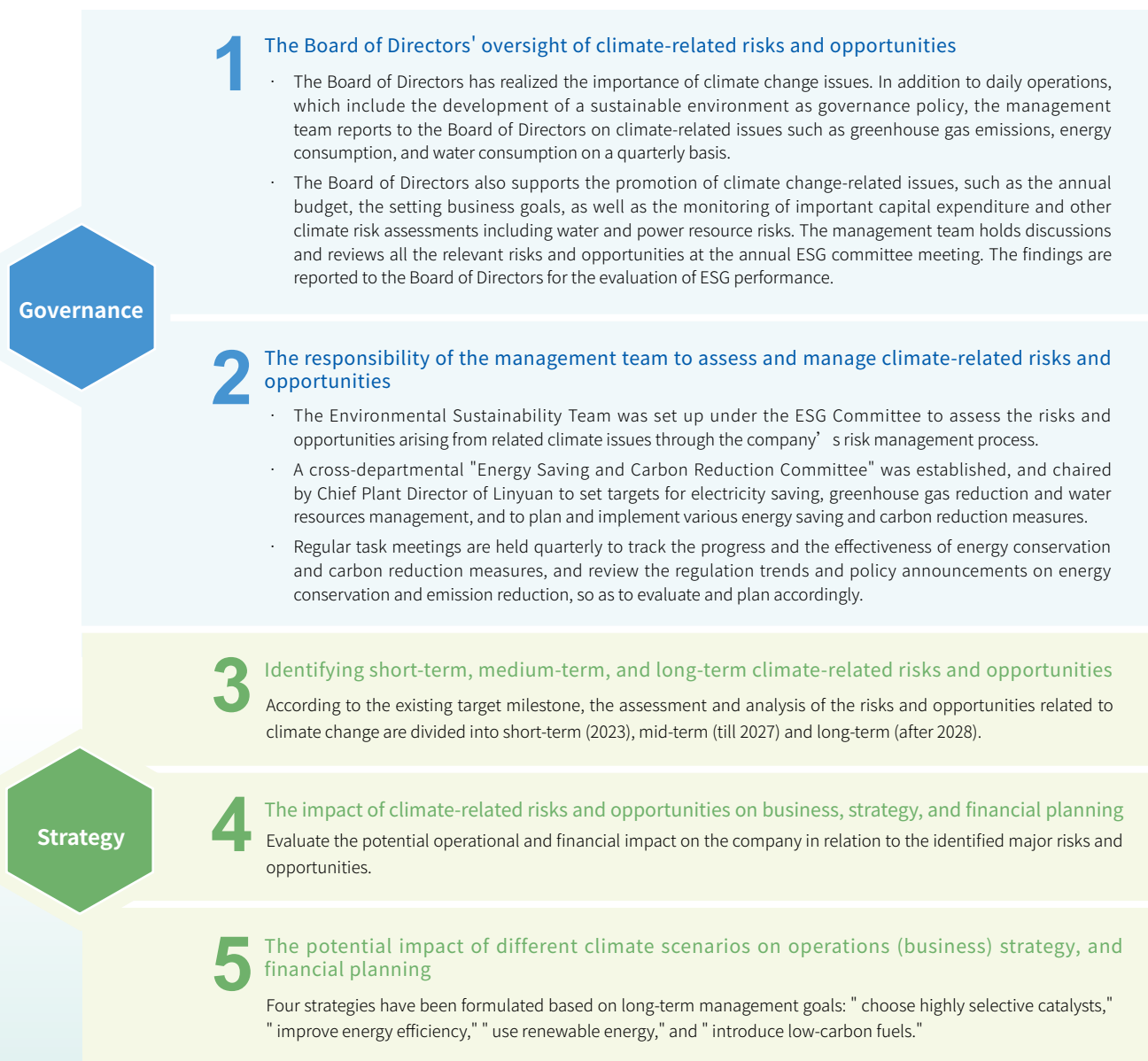


## Task Force on Climate - related Financial Disclosures (TCFD)

To transparently disclose climate change-related risks and opportunities, and to ensure that stakeholders understand OUC's efforts and strategies in addressing climate change.

OUC adopted the "Recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD)" framework in 2022 to measure and evaluate the impact of climate change through the four major frameworks of governance, strategy, risk management, and metrics and targets, evaluate and disclose the potential business impact of climate change issues on OUC, and develop countermeasures to reduce the potential impact of climate change risks on our operations.

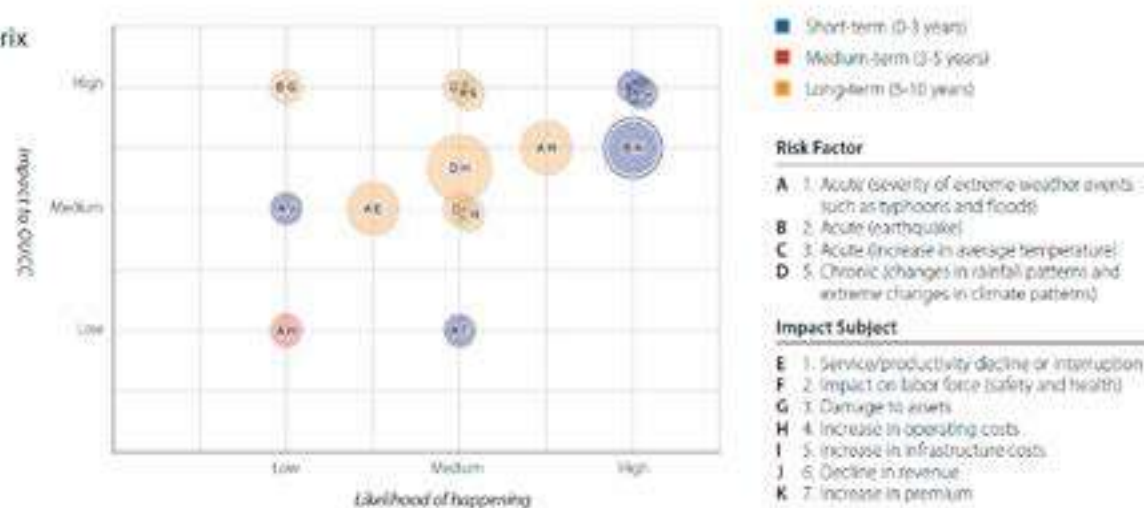
### Task Force on Climate-related Financial Disclosures (TCFD) comparison table





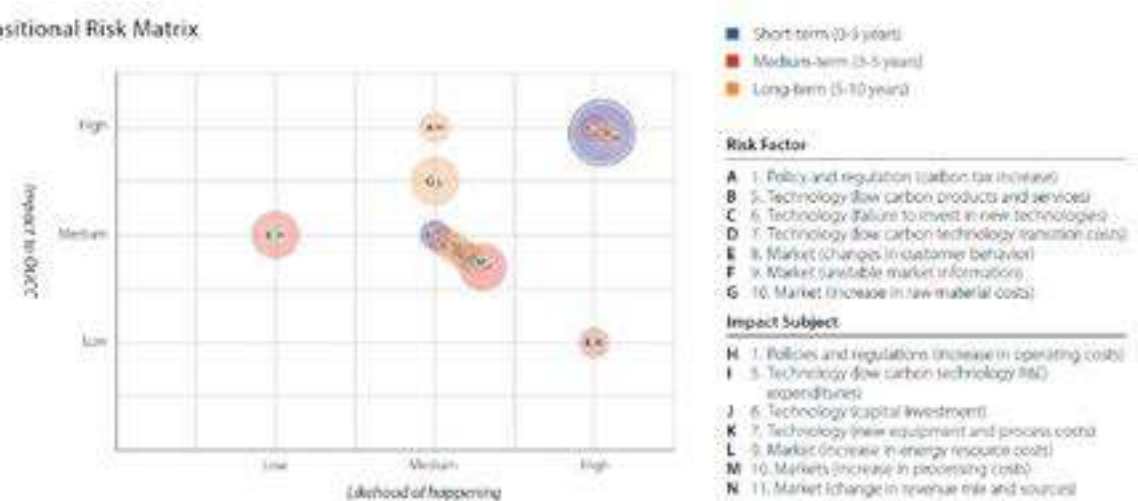
OUCC Material Climate  
Risk Matrix

3 Physical Risks	Time Frame	Impact Subject
Acute (earthquake)	Short-term	Increase in premium
Acute (severity of extreme weather events such as typhoons and floods)	Long-term	Increase in operating costs
Chronic (changes in rainfall patterns and extreme changes in climate patterns)	Long-term	Increase in operating costs

Physical  
Risks Matrix

3 Physical Risks	Time Frame	Impact Subject
Policy and regulation (carbon tax increase)	Short-term	Increase in operating costs
Market (increase in raw material costs)	Long-term	Increase in energy resource costs
Technology (low carbon products and services)	Long-term	Low carbon technology R&D expenditures

Transitional Risk Matrix



## Business Integrity

To implement managerial integrity and eliminate improper business practices, the OUCC has formulated the "Best Practice Principles" and "Code of Ethics" and provided regular education and publicity to regulate the business conduct of Directors, Managers, and employees. In 2022, 239 employees participated in 163 hours of training.

We require Directors and senior management to issue a statement of compliance with the best practice policy. It stipulates that Directors, Managers, and employees shall not directly or indirectly provide, promise, request, or accept any improper benefits, engage in dishonest acts that violate integrity, or breach fiduciary obligations while engaging in business conduct.

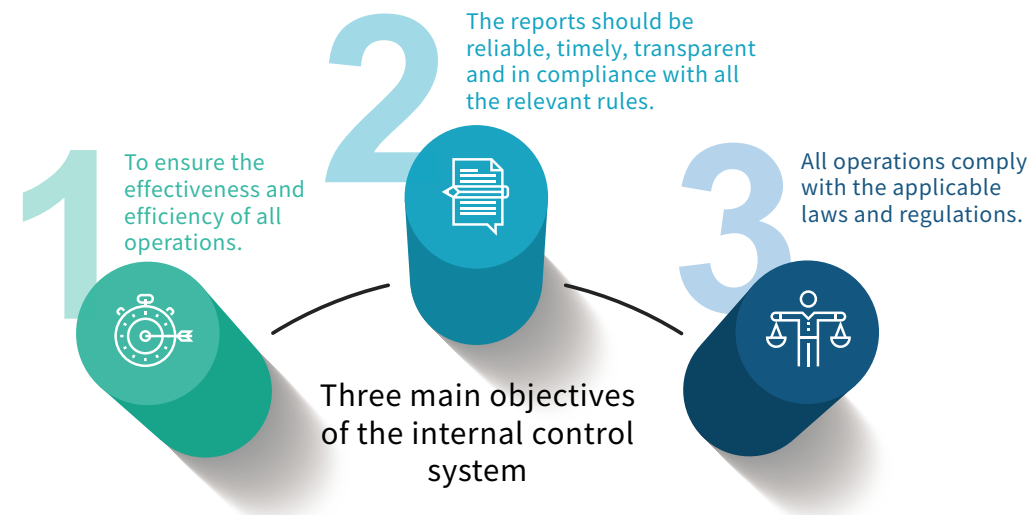
The preceding policies and provisions are published on the company website to communicate and publicize to relevant stakeholders. OUCC shall issue punitive actions for any violation of the preceding provisions according to law. We also provide multiple communication channels. If there is a violation of the best practice regulations, the illegal behavior can be reported through the appropriate channels, which will be handled confidentially.

Management Policy	"Best Practice Principles," "Code of Ethics," "Meeting Rules of Board of Directors," "Procedures for Handling Material Inside Information," and "Whistle-blowing System and Discipline Measures against Violation of the Codes of Ethics and Best Practice Principles"
Supervision Mechanism	The dedicated department regularly reports the implementation status to the Board of Directors.
Reporting Channel	<ul style="list-style-type: none"><li>Confidentially handle whistleblowing cases to protect whistleblowers. Members of the investigation team and relevant parties shall keep the investigation process and relevant materials confidential and shall not disclose them to the public without authorization.</li><li>Whistleblowing reporting channels:<ul style="list-style-type: none"><li>Anti-corruption mailbox (auditcommittee@oucc.com.tw): accepts reports from Whistleblowers such as shareholders, investors, customers, suppliers, contractors, etc.</li><li>Human Resources Department (hrtaipei@oucc.com.tw): accepts reports from OUCC's employees.</li><li>Stakeholder contact channels: <a href="https://www.oucc.com.tw/csr-99-page470">https://www.oucc.com.tw/csr-99-page470</a></li></ul></li></ul>
Relief Procedures	<ul style="list-style-type: none"><li>Once the report is verified to be true, the relevant unit shall be instructed to review the relevant internal control system and operating procedures to propose improvement measures.</li><li>Should the report be accepted and the information completed, an investigation team will be established within 5 days of receiving the written information to start the investigation, which shall be conducted based on the facts, and the accused and the relevant parties are obligated to cooperate with the investigation.</li><li>Confidentially handle whistleblowing cases to protect whistleblowers. Members of the investigation team and relevant parties shall keep the investigation process and relevant materials confidential and shall not disclose them to the public without authorization.</li></ul>
Management Results	<ul style="list-style-type: none"><li>In 2022, there were no integrity/ethics-related violations</li><li>According to Taiwan government regulations, if the competent authority imposes a penalty or other administrative punishment that will significantly impact the Company's finances or business, the major information shall be disclosed on the Market Observation Post System (MOPS.)</li><li>In the past 3 years (2020 to 2022), OUCC has not disclosed any major information regarding punishment by the competent authority or other incurred administrative sanctions on the MOPS.</li></ul>



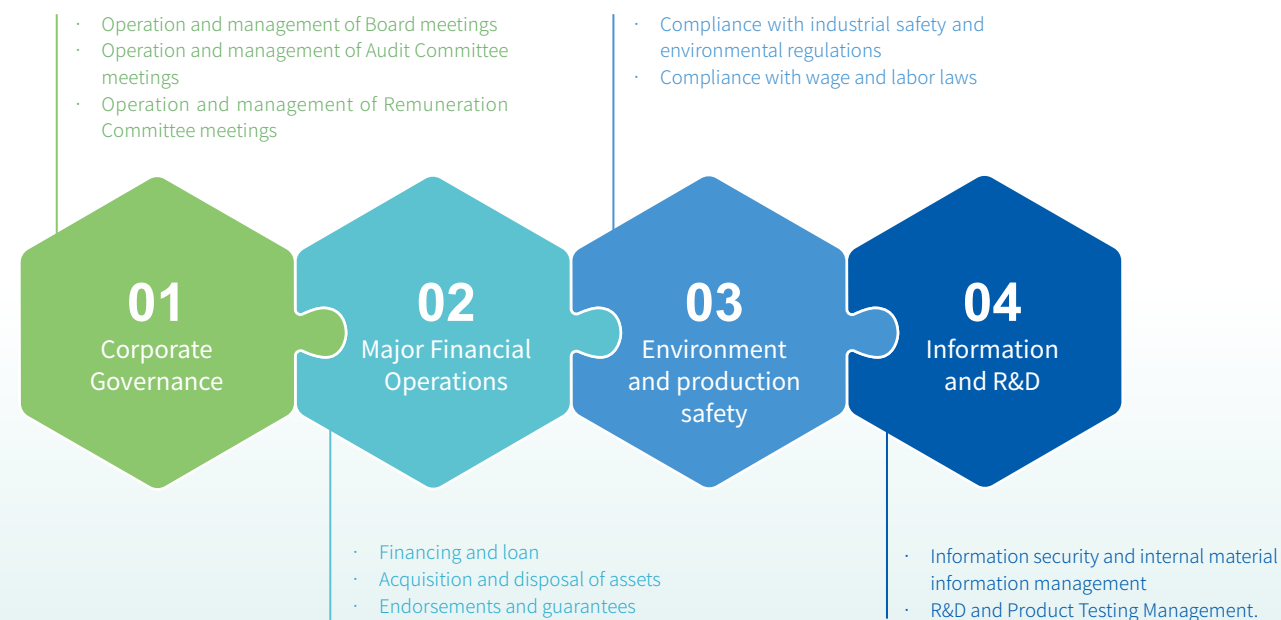
## Sound Internal Control System

Designed by the managers and approved by the Board of Directors, the internal control system of the OUCC is to be implemented by the Board, the management, and other employees and is designed to provide sound management and to achieve objectives of the internal control system.



Effective operation of the internal control system is ensured by an independent audit department directly responsible to the Board of Directors. In addition to regular business audit reports to the Audit Committee, the audit officer also reports at the Board of Directors meetings.

OUCC places high value on ESG related issues, internal control, and the internal audit. The 2022 audit plan included reviews on corporate governance, financial operations, environmental and labor safety, as well as information, R&D and other related operations, which were conducted to ensure the company operations and information disclosure met the expectations of all the stakeholders.

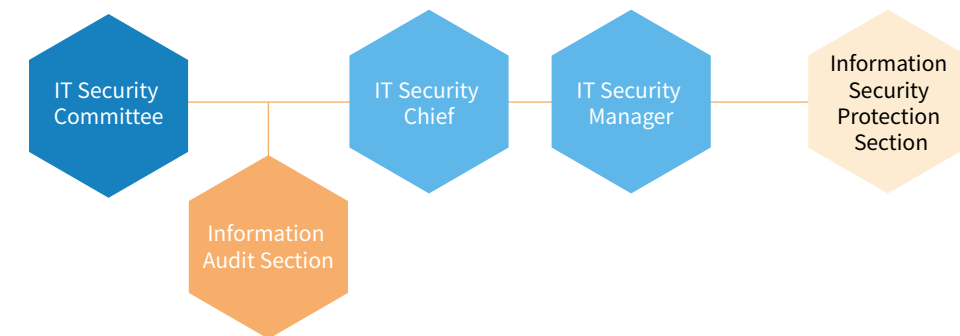


## Information Security Risk Management

To safeguard the information from the impact of unendurable risks, OUCC adopts the concept of Business Continuity Planning (BCP) to establishing rigorous information security policies and processes, clearly defining the responsibilities and requirements for various operational activities in information security, ensuring the sustainable operation of the company and the security of customer information.

### 1.IT Security Organization

For the "IT Security Management Organization," OUCC plans to set up an IT security chief as an information security management representative to supervise information security.



### 2.Management Approach

OUCC's risk transfer and contingency strategies include management mechanisms such as risk assessment, risk transfer, emergency response and maintenance audit to secure proper operation of the information system.





Risk Assessment	<ul style="list-style-type: none"><li>OUCC adheres to "confidentiality, integrity, and availability" for identification of asset value at each stage of information management, to determine the scope of information security risk management.</li></ul>
Risk Transfer	<ul style="list-style-type: none"><li>Multiple security defenses: these include firewalls, an enterprise VPN and remote access, encryption, intrusion detection &amp; prevention, and anti-spyware software.</li><li>Application of an authorization mechanism: a user must fill in the online application form and wait for the authorization upon the completion of the electronic procedure.</li><li>Management of hardware devices: OUCC is equipped with uninterruptible power supplies and has inspections of safety control facilities carried out regularly.</li><li>Data transmission lines are set up between Taipei Office and Linyuan Plant: A MPLS Virtual Private Network (VPN) was established using two 300MB private data lines. The two private lines are used in combination to allow continuous backup.</li><li>Two-tier identity authentication was employed using SSL VPN encrypted connections to reduce the risk of hacker attacks when the application system needs remote login.</li><li>The Windows server was upgraded to the 2019 version, so that the latest security patches from the original supplier could be applied to ensure the best level of security in the system operation.</li><li>The usage control of USB flash drives on personal computers was strengthened. Only USB flash drives that have been certified and registered by the IT department can be used on computers in the company. Upon return, the borrowed drive will have to be formatted and scanned for virus.</li><li>Notebook computers can be borrowed for business usage after registered with IT department. Upon return, IT will thoroughly check and format the USB flash drives, as well as scan for virus.</li></ul>
Emergency Response	<ul style="list-style-type: none"><li>Backup and restore mechanism: A mutual IT system backup mechanism has been established between the Taipei office and the Kaohsiung Linyuan Plant. In the event of an emergency, the system can be switched immediately to synchronize and sustain continuity of the IT system. System operations can be resumed within 4 hours.</li></ul>
Maintenance Audits	<ul style="list-style-type: none"><li>Electronic Administration Operations: OUCC has established a comprehensive electronic documentation system, an administrative process control and electronic mechanism, to reduce unnecessary resource consumption.</li><li>File security control and maintenance: maintenance for fire and moisture protection of hardware and media devices.</li><li>Systems security audit management: an initial audit startup procedure has been built into the information system, and user account permissions are reviewed on a regular basis.</li></ul>





### 3.Action Program

To further strengthen security and allay concern, a safer two-tier authentication mechanism was implemented for personnel external login for business purposes in 2022. We also introduced SSL certificates to establish a standard specification for a password link between the website server (host) and the website browser (client), so that clients' and internal information can be secured against being monitored.

Strategy	Goal	Program	Description
Risk Transfer	 Enhance system defense mechanisms	Upgrade computer firewall and antivirus software	<ul style="list-style-type: none"><li>The new sandbox technology is used to ensure a safe application environment and isolate computer virus attacks, to avoid information leakage from advanced cyber attacks.</li><li>OUCC upgrades antivirus software, which includes the filtering of remote command execution attacks, the prevention of malicious email attachment attacks, the modification and auditing of system configuration, and a cloud-based analysis of unknown programs.</li></ul>
		Email filtering	<ul style="list-style-type: none"><li>Strengthen email filtering to identify and filter out spoofed emails, reducing the risk of infection.</li></ul>
	 Enhance login security	Remote terminal login via two-tier authentication mechanism	<ul style="list-style-type: none"><li>Before introduction: Should the account and password of remote users be stolen, the illegal entrance may get direct access to the information.</li><li>After introduction: In addition to the account and password, the remote user also needs to enter a verification code from a mobile phone to access the terminal server and data.</li></ul>
Emergency Response	 Enhance resilience	Establishment of a remote backup mechanism	<ul style="list-style-type: none"><li>The establishment of a comprehensive remote backup mechanism which consists of a total of four backup processes to enable information from OUCC head office and Kaohsiung Linyuan plant to be simultaneously backed up bilaterally.</li></ul>
	 Confidentiality	Cookie Policy Statement	<ul style="list-style-type: none"><li>OUCC incorporates a Cookies Policy Statement (Data Confidentiality Policy) to its official website.</li><li>Establish information security policies to secure customer information and intellectual property rights.</li></ul>
		Keyword Detection	<ul style="list-style-type: none"><li>New DLP capabilities with Exchange Server 2016 perform in-depth content analysis through keyword matching, dictionary matching, rule algorithm evaluation, and other content checks to detect content that violates an organization's DLP principles, and notify senders of information that violates the principles</li></ul>

#### Managing Employees' Privately Owned PCs

The following measures are adopted to manage the employees' privately owned computers at workplace:

- Controlling devices' unauthorized access to the company intranet (802.1X)
- Setting different policies and rules according to different management rules
- Assigning the end equipment to designated VLAN based on the identity of the user
- Supporting the management with switches of different vendors
- Using unified management interface to simplify IT work
- Identifying and monitoring the connected devices in the company and their status instantly
- Creating audit logs of the company intranet

#### Managing Privileged Accounts

To prevent data breach disguised as legitimate actions, OUCC uses a Privilege Access Management (PAM) system to avoid the threats caused by credential theft and privilege abuse.

To manage the user accounts of the system, the random one-time passwords are generated, and become invalid upon the completion of each task to prevent or reduce the risk of lost or hacked passwords.

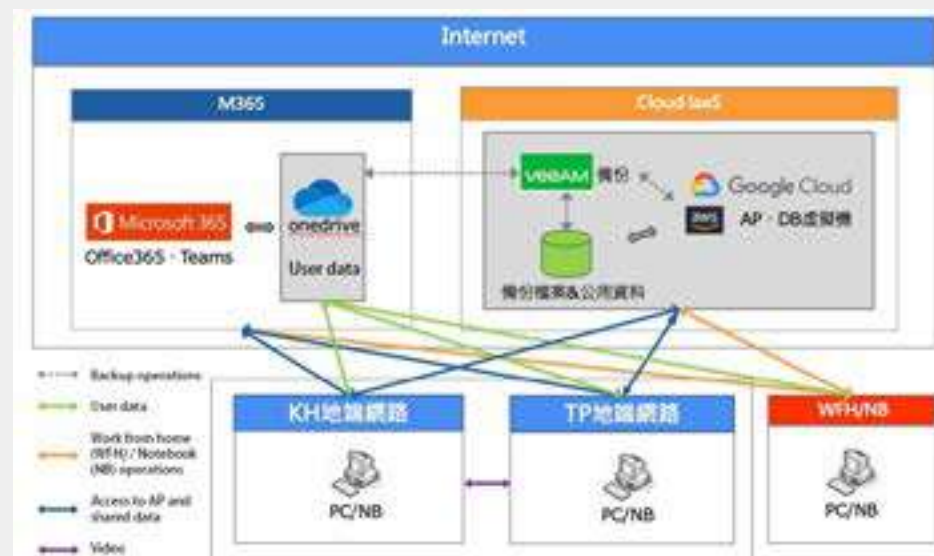


## Future Planning: Cloud Server

The Information Department is planning to initiate the Data Center Cloudification Project in Q2 of 2023 to move towards Green IT in line with ESG net-zero carbon target.

The Cloud Server realization plan is as follows:

1. Only network information and communication equipment are left in the Taipei and Kaohsiung IT hubs.
2. All servers in the original IT hubs are transferred to the Cloud.

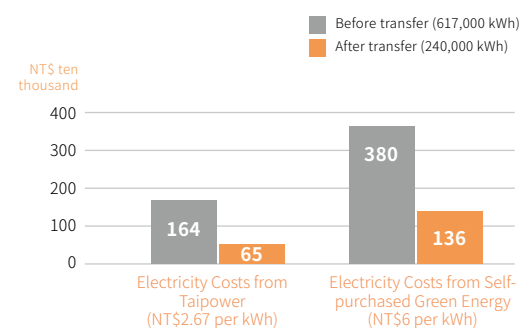


Note: Annual electricity costs before and after the transfer are NT\$1.5 MM and NT\$0.5 MM respectively.

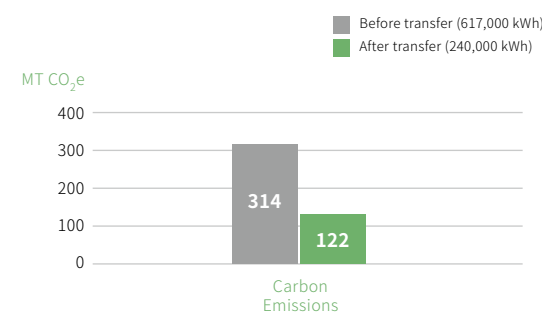
### Effects :

- The space of the IT hub could be reused
  - Achieve the ESG net-zero carbon emission target
  - Resources may be swiftly adjusted with the cloud according to needs
- » Cloud services facilitate quick expansion and removal according to requirements, which serves the purposes of cost reduction and fast introduction, as no more substantial equipment needs to be acquired.
- » The pricing is more flexible as the payment is based on the extent of usage.

Comparison of Electricity Costs Before and After Transfer to the Cloud



Comparison of Carbon Emissions Before and After Transfer to the Cloud



## Stakeholder Communication and Material Topics





OUCC attaches great importance to communication and interaction with stakeholders from all walks of life. Only by understanding the needs of stakeholders, implementing, and responding transparently to the issues which are valued can the company truly internalize its sustainable operations into corporate management and fulfill corporate sustainability commitment.

### Diverse Stakeholder Communication

OUCC adopts the five major principles of AA1000 Stakeholder Engagement Standard (SES) to identify through the responsibility, influence, proximity, dependence, representative and policy implication perspectives of OUCC's stakeholders, which include employees, suppliers, corporate customers, shareholders and investors, local communities, the government and competent authorities, etc.

With substantial analysis, the concerned issues of stakeholders are identified, and relevant performance and improvement are disclosed in the Report. We maintain communication and discussions with multiple stakeholders, actively listen and respond to the expectations of employees, investors, suppliers and community residents on OUCC's ESG implementation, which will serve as an important reference of the company for improving ESG performance and sustainable innovation and growth.





### Stakeholders' Communication Results

Stakeholder	Meaning for OUCC	The Main Communication Channel and Frequency	Concerned Issues	GRI Material Topics
 Shareholders and Investors	The shareholders and investors are OUCC's stockholders, to whom we must be responsible.	1.Shareholders' meeting (annually) 2.Investors conference (quarterly) 3.Annual report (annually) 4.Corporate investors' forum (occasionally) 5.Spokesperson hotline and mailbox (occasionally) 6.The company website (permanent) 7.MOPS (permanent)	• Corporate Governance • Industry Trends • Economic Performance • Risk Management • Dividend Policy	• Water and Effluents • Emissions
 Employees	The employees are the cornerstone of OUCC's sustainable operation, and the driving force of our continuous growth.	1.Employee Welfare Committee (occasionally) 2.Labor-employer meetings (quarterly) 3.Occupational Health & Safety Committee (quarterly) 4.Performance appraisal (annually) 5.Group activity (occasionally) 6.Education training (occasionally) 7.Grievance mail box (permanent) 8.Employee communication (annually)	• Employee Welfare • Work Environment • Labor Rights	• Market Presence • Forced or Compulsory Labor • Occupational Health and Safety





## Stakeholders' Communication Results

Stakeholder	Meaning for OUCC	The Main Communication Channel and Frequency	Concerned Issues	GRI Material Topic
 Corporate Customers	Satisfied customers are the key to the development of our business and services.	1.Customer satisfaction survey (annually) 2.E-mail (occasionally) 3.Distribution meeting (occasionally) 4.Customer visitation (occasionally) 5.The company website (permanent) 6.The ESG website and report (annually)	· Industry Trends · Emission · Customer Privacy · Law and Regulation Compliance · Occupational Health and Safety	· Emissions · Occupational Health and Safety
 Suppliers / Contractors	We have a number of products and service chains, all of which depend on the support from suppliers and contractors.	1.Supplier periodical evaluation (annually) 2.The ESG website and report (annually) 3.Transportation meeting (occasionally) 4.Supplier/Contractor safety meeting (monthly)	· Supply Chain Sustainability Development · Water Resource Management · Waste Management · Occupational Health and Safety Management	· Water and Effluents · Forced or Compulsory Labor · Occupational Health and Safety
 Local Community	As a good neighbor of the local community, we are committed to environment protection and creation of ideal dwellings.	1.Charity donations (occasionally) 2.Event sponsorship (occasionally) 3.Telephone contact (occasionally) 4.The ESG website and report (annually)	· Environmental Pollution Management · Toxic Substance Management · Environmental Compliance	· Water and Effluents · Emissions
 Government Agency / Non-government Organization	All of our products, services and operational activities abide by the inspection and supervision of governmental and non-governmental agencies.	1.Requested reports of government agencies (occasionally) 2.Regulatory audit (occasionally) 3.Academic research cooperation (occasionally) 4.Social participation of related Union / Association (occasionally) 5.The ESG website and report (annually)	· Law and Regulation Compliance · Energy · Award Engagement	· Market Presence

## Material Topics Determination

## Process for Determining Materiality

- **Frequency:** once a year.
- **Materiality process/material topics review and signature:** Approved by the President (representative of the highest governance unit).
- **Types of stakeholders participating in the assessment:** Members of each ESG team collect issues concerning the stakeholders in respective business.













## Material Topics Identification Procedure

- Step 1** Continue to collect / identify various sustainable issues
- Collect international sustainable issues, disclose frameworks/standards (such as GRI guidelines, TCFD, SASB,) and OUCC's news in 2022, and identify ESG-oriented issues according to the short-, medium-, and long-term ESG goals.
- Step 2** Impact prioritizing
- After the ESG team representatives have evaluated the significance of topics, the final topic analysis and discussion are conducted according to the internal considerations, industry practices, and benchmarks to set the "significance threshold" for actual and potential impact issues. The goal is to sort and complete the "Annual Material Topic Matrix."
- Step 3** Confirmation of results / matrix of material topics
- After the "Annual Material Topic Matrix" is established by the ESG Committee, it is sent to the "President (representative of the highest governance unit)" for review and approval. The goal is to plot a matrix according to the identification results of the current year, to serve as an important reference for ESG report disclosure/action planning.

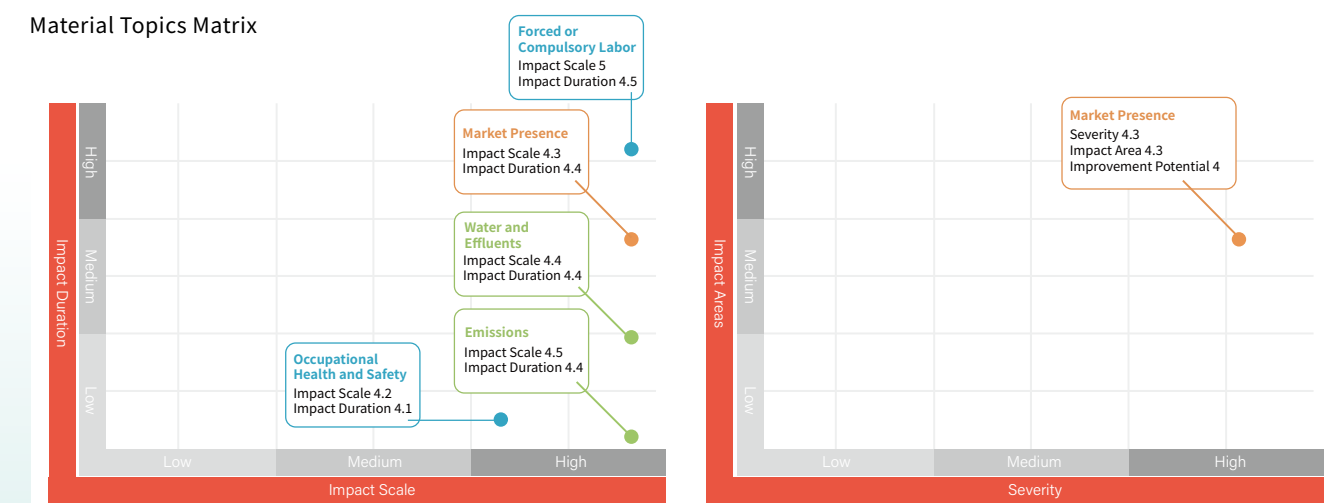
## Results of Material Topics Determination

Assessing material topics, OUCC considers the impacts (positive/negative) of each topic on the economy, environment, and people to fully identify the internal and external effects of the issues.

Actual Positive Impacts				
ESG	Material topics	Principles of Materiality Impacts on the Economy, Environment, and People	Sources of Impact	Targets of Impact
	<b>Water and Effluents</b> (Impact Scale: 4.4 / Impact Duration: 4.4)	We pay close attention to the water resource management issue and aim to enhance the water resource usage efficiency, lower the water shortage risk at the plant site, and improve water resource reuse through innovative technologies.	Operational Activities Product Service Business Relationships	 Employees
	<b>Emissions</b> (Impact Scale: 4.5/Impact Duration: 4.4)	Formulate short-, medium-, and long-term goals for OUCC's energy resource management based on energy consumption knowledge and according to laws and regulations as well as international environmental and energy management trends to capitalize on commercial opportunities in low-carbon industries.	Operational Activities Product Service Business Relationships	 Supplier
	<b>Occupational Health and Safety</b> (Impact Scale: 4.2/Impact Duration: 4.1)	Under the principle of "there is no safest, only safer," we have been dedicated to developing a chemical safety management system, establishing the ISO 45001 international standard, and providing a healthy and safe working environment through continuous inspection and development.	Operational Activities Product Service Business Relationships	 Employees
	<b>Forced or Compulsory Labor</b> (Impact Scale: 5/Impact Duration: 4.5)	We are committed to providing comprehensive training, good benefits, and a pleasant working environment. We also pay close attention to labor rights and interests. We have formed labor union and appealing mechanism to prevent labor human rights violations that may lead to lawsuits and reputational issues.	Operational Activities Product Service	 Employees
	<b>Market Presence</b> (Impact Scale: 4.3/Impact Duration: 4.4)	We actively keep hold on the industry market salary level, provide better salaries and benefits compared with the industry average, assure the stability of new and existing employees, and retain and recruit excellent talents.	Operational Activities Product Service Business Relationships	 Employees
Actual Negative Impacts				
ESG	Material topics	Principles of Materiality Impacts on the Economy, Environment, and People	Sources of Impact	Targets of Impact
	<b>Market Presence</b> (Severity: 4.3/Impact Areas: 4.3/Improvement Potential: 4)	In addition to meeting the minimum wage regulated laws, OUCC regularly reviews its salary competitiveness in the market/industry and understands and evaluates the labor market to ensure competitiveness.	Operational Activities	 Employees

Note: Material topics changes: Additions of "Market Presence" and "Forced or Compulsory Labor"; Deletion of "Economic Performance," "Energy," "Waste," "Labor Relations," and "Labor Management Relations."

## Material Topics Matrix






Sources of Impact: Actual Positive Impacts

Sources of Impact: Actual Negative Impacts



## List for Material Topics

ESG	Material Topics	Policies and Commitments	Audit and Tracking Mechanism	Targets	Progress Update for 2022
	Water and Effluents	Without strict management, the chemical industry of OUCC may cause actual or potential negative environmental impacts on local communities.  Regarding environmental issues, we have established the “Procedures for OUCC production process wastewater discharge” and “Environmental Safety and Health Policy” to grasp environmental protection data to ensure that the implementation rate and operational conduct comply with environmental laws and regulations.	<ul style="list-style-type: none"><li>Responsible Unit: Engineering Design Dept. Contact Mr. Yeh / Mr. Wong for environmental protection issues: (07)6413101 #2302</li><li>The cumulative daily record of water meter data at plant site is regularly reported to the Industrial Development Bureau according to the regulations.</li></ul>	<ul style="list-style-type: none"><li>Safety concepts: zero accidents, zero injuries, zero pollution</li><li>Strive to save the water of 2% daily</li></ul>	<ul style="list-style-type: none"><li>Maintain zero pollution</li><li>Conserve 100 metric tons of water daily</li></ul>
	Emissions		<ul style="list-style-type: none"><li>Responsible unit: S.H.E Dept. Contact Mr. Yeh/ Mr. Wong for environmental protection issues: (07)6413101 #2302</li><li>Pass and obtain external certifications annually: ISO 14064-1, ISO 14001, ISO 50001</li><li>The Energy Saving and Carbon Reduction Committee holds regular meetings quarterly.</li></ul>	<ul style="list-style-type: none"><li>Safety concepts: zero accidents, zero injuries, zero pollution</li><li>Strive to implement an average annual carbon reduction rate of 1%</li></ul>	<ul style="list-style-type: none"><li>Maintain zero pollution</li><li>Report greenhouse gas projects to the Board of Directors each quarter</li></ul>
	Occupational Health and Safety	Establish the “Environmental Safety and Health Policy” and the “Guidelines for Consultation and Participation of Workers and the Management Procedures of Occupational Safety and Health Committee” to strengthen the performance of the occupational safety and health management system.	<ul style="list-style-type: none"><li>Responsible unit: S.H.E. Dept.</li><li>Join the Taiwan Responsible Care Association (TRCA)</li><li>Maintain the validity of the ISO 45001 Occupational Safety and Health Management System</li><li>Execute hazard and operability analysis and 5S safety inspection</li></ul>	Precautionary thinking: zero accidents, zero injuries, zero pollution, conduct regular inspections on safety, health, and environmental protection-related actions, and create a safe workplace environment.	No occupational injury occurred
	Forced or Compulsory Labor	Established a "Human Rights Policy" according to government laws, support international human rights conventions, and prohibit any form of forced labor and illegal discrimination.	<ul style="list-style-type: none"><li>Responsible unit: Human Resources Dept.</li><li>Established personnel appraisal committee and labor union to supervise and audit the relevant events</li></ul>	<ul style="list-style-type: none"><li>Continue to protect labor rights and comply with laws and regulations</li><li>Raise the labors' human rights awareness and conduct relevant publicity</li></ul>	No forced or compulsory labor occurred
	Market Presence	We have a "Salary and Remuneration Committee" to ensure that the salaries meet the employee rights and interests required by government regulations.	<ul style="list-style-type: none"><li>Responsible unit: Human Resources Dept.</li><li>We have a Remuneration Committee and Labor Union to supervise and review related events.</li></ul>	Cooperate with government policies, and refer to the usual industry standards, and provide local salaries that are superior to the Labor Standards Act.	All comply with relevant laws and regulations

## Association Membership List

OUCC keeps interacting with many external organizations across the industry. In addition to active participation in annual meetings, summits, and general assemblies of international, national, and regional organizations. The company promotes mutual exchange among the same and different industries. Through instant communication, it allows OUCC to understand the suggestions of relevant stakeholders to the chemical industry and help OUCC march toward the sustainable development goals.

Association and Union Name	Membership	Annual / Membership Fees Paid
Petrochemical Industry Association of Taiwan (PIAT)	Director, Member	NTD 240,000
Taiwan Chemical Industry Association (TCIA)	Director, Member	NTD 200,000
Taiwan Responsible Care Association (TRCA)	Director, Member	NTD 100,000
Taiwan Institute of Chemical Engineers	Member	NTD 50,000
Taiwan Industry Gas Association (TIGA)	Director, Member	NTD108,000
Industrial Gas Association of R.O.C	Member	NTD 14,400
Industrial Safety and Health Association (ISHA) of the R.O.C	Member	NTD 5,4000
Kaohsiung Chamber Of Industry	Member	NTD 10,800
Chinese Arbitration Association, Taipei	Member	NTD 12,000
Chinese National Association of Industry and Commerce, Taiwan (CNAIC)	Member	NTD 50,000
Kaohsiung Economic and Trade Development Association	Supervisor, Member	NTD 80,000
Taiwan Supercritical Fluid Association	Member	NTD 10,000



# Chapter. 03

## SINCERE AND DILIGENT PARTNER

### Human-centered

OUCC treats its employees as the company's most valuable assets. It is committed to creating a safe and healthy work environment, and integrating ESG (Environmental, Social, and Corporate Governance) values into its business operations and corporate culture. OUCC provides compensation and benefits that surpass industry standards, ensuring that employees can work with peace of mind.

With pledges to defend the workers' rights, OUCC complies with labor standards and treats each employee fairly, and offers proper workplace facilities (both software and hardware) as well as employee welfare for the employees to work, learn and grow at the workplace and maintain balanced between career and personal life. The goal is to help the workers demonstrate integrity to the job and the stakeholders, and provide the customers with the best products and services.



**2022**  
Sustainable  
Performance

#### Solid Partnerships

- Employee benefits expenditures totaled NT\$ **6,965.7** million.
- Employee average compensation was NT\$ **100.9** million.

#### Satisfied Customer

- A customer of EO&EG satisfaction survey scored 33.4 points out of perfect score of **35** points.

#### Chemical Supply Chain

- 100**% of suppliers followed the OUCC environmental policy.
- The total number of evaluation audits on suppliers was **658**.
- 100**% of freight forwarders passed the transportation safety, quality, and hygiene on-site audit.



## Partner of OUCC



OUCC is committed to protecting the rights and interests of laborers. It selects outstanding talents with a fair, open and impartial recruitment system, provides remuneration and benefits that are better than the industry average, builds a safe and healthy workplace, and provides diversified and smooth communication channels to strengthen corporate identity, ensure the stability of new recruits and existing employees, retaining and attracting outstanding talents.

In 2022, our company did not have any significant risks of forced or compulsory labor in its operational locations or suppliers. Our practices in this regard comply with the regulations set forth by the labor laws of our country, and we have not incurred any major penalties in such regard.

## Equal Employment Rights

To safeguard the labor rights of the employees, our staff management system is based firmly on the equipped techniques and capability of the employees. There is no discrimination based on gender, religion, nationality, or ethnicity with respect to employment, salary, performance evaluation, promotion, education and training, or personal benefits.

OUCC upholds the principle of fair and just recruitment and sets no unreasonable restrictions (such as withholding ID cards or passports, charging improper fees, etc.) Child labor is strictly prohibited. Employment agreements and contracts are carried out and written in a language the employee can fully understand.

## Recruits of Diverse Talents

The head office of OUCC is established in Taipei City, and the factory is located in Linyuan Industrial Park, Kaohsiung City. To promote and increase local employment opportunities, most of the employees employed in Linyuan plant are given priority to local residents.

In 2022, the total number of OUCC employees in Linyuan is 318. There are 92 people registered in Linyuan, with the proportion of local employment reaching 28.93%, which showcases the support and encouragement of OUCC in terms of employment of local talents.

In addition to local staff, OUCC employs 2 Indonesians, 1 Chinese and 1 Hong Konger, showing the diverse employee composition. Foreign employees are given assistance with work visa applications, resident IDs and admission to National Health Insurance (NHI.) The company also helps them to acquire admission to the additional group insurance, jointly established by the company and the employee welfare committee, which supplements the coverage of basic business insurance. The company helps those foreign employees with transportation to Taiwan, relevant law compliance, and living assistance before they report to work. OUCC cares for their foreign employees at all times and reaches out in time of need.

## Percentage of Local Residents at Linyuan Plant

Job title	Local Residents	%
Engineer / Administrator and above Including up to deputy managers/senior specialist level	15	4.71
Operation-Foreman	16	5.03
Operation-Operator	61	19.18
total	92	28.93
Total of employee at Linyuan plant	318	

Note:

1. In terms of nationality, OUCC hires 98.7% of domestic employees. Therefore, the ratio of local employees at Linyuan is used as the basis for calculation.

2. Ratio = Number of employee located in Linyuan area/ Total of employee at Linyuan plant.

## OUCC Employee

OUCC employees are all full-time (non-fixed term contract) employees. Due to the industrial nature, on-site production work requires a physical foundation, so the employment ratio of male employees is higher than that of female.

In 2022, the total number of OUCC employees is 365, 324 male employees (89%) and 41 female employees (11%). However, OUCC values and cares as always for the needs of female employees equally, and does not differentiate genders in terms of compensation and benefits, career and life development, and upholds the principle of equal rights for men and women in performance evaluation and promotion.

## Employee Structure

	Male (person)	Female (person)	Total
Total number of employees	324	41	365
Number of full-time employees	324	41	365
Number of employees on a full-time basis	324	41	365

Category	Age	Male (person)	Male (%)	Female (person)	Female (%)
All employees	Total number of all employees: 365	324	88.7671	41	11.2329
General Staff	≤ 29	38	10.411	10	2.7397
	30~50	18	51.7808	19	5.2055
	>50	38	10.411	7	1.9178
Middle Management	30~50	18	4.9315	2	0.5479
	>50	31	8.4932	1	0.274
Senior Management	30~50	2	0.5479	0	0
	>50	8	2.1918	2	0.5479
DL	≤ 29	16	4.3836	0	0
	30~50	82	22.4658	0	0
	>50	12	3.2877	0	0
IDL	≤ 29	22	6.0274	10	2.7397
	30~50	127	34.7945	21	5.7534
	>50	65	17.8082	10	2.7397

Note:

1. "Direct personnel" refers to plant production unit employees of grade 8 and down. "Indirect personnel" refers to non-production unit employees of grade 8 and down, and mid-level management and up. Both are included in the "non-fixed term contract" employees.

2. Definition of employee: General employee-grade 8 and down, mid-level management-grade 5-7, senior management-grade 4 and up.

3. Number of employees in service as of December 31, 2022.





## Manpower Diversity

Age	2020	2021	2022
Aboriginal employee	1	1	1
Disabled employee	1	1	1

Note: OUCC values the employment rights of the indigenous and disabled, and abide by labor regulations. In the situation where insufficient number of people with disabilities were hired in 2022, the differential subsidy has been paid according to the law. Recruitment for suitable candidates is still underway.

## Multiple Communication Channels

The OUCC pays careful attention to the voices of the employees, promotes right communications with the employees via various approaches. In addition to regular labor-management meetings, the Company communicates and discusses the labor/management coordination by means of special internal meetings, employee seminar and timely manner, to establish effectively the concordant relationships, as well as a good working environment.



Labor Union

- The OUCC Union was established in 1988 to protect the interests of members. Group agreement has been approved in 1995. Union members constitute 60% of the employees in 2022.

Item	2022
total employees covered by the collective bargaining agreement	100%

- Protect the employees' rights to the freedom of association and collective bargaining power without any involvement in the establishment, operation, or management of an organization or collective bargaining.
- Through the union's communication, it promotes harmonious labor relations and creates a good working environment.



Labor /  
Management  
Meeting

- The regular labor-management meeting appropriately reflects the employees' opinions on the operation and financial status of OUCC or the important decisions concerning the interests of employees, so as to effectively solve the issue.
- Should the company find it necessary to make any major changes that affect OUCC employees, the notification period shall comply with the relevant regulations of the Labor Standards Act.

## New Recruits

Age	Male (person)	Male (%)	Female (person)	Female (%)
≤ 29	33	9.0411	5	1.3699
30~50	50	13.6986	6	1.6438
>50	2	0.5479	0	0

Note: %= Number of new recruits/ total number of employees of the year

## Employee Turnover

Age	Male (person)	Male (%)	Female (person)	Female (%)
≤ 29	12	3.2877	1	0.274
30~50	36	9.863	3	0.8219
>50	9	2.4658	1	0.274

Note: %=Number of employee turnover(including retirement and non-involuntary leave)/ total number of employees of the year

## Non-employee Worker

Item	Description
Most common worker types	Filling personnel of the Logistics; cleaning personnel
The contractual relationship with the Company	Manpower dispatch contract
Type of work performed	Filling operation; plant site environment cleaning operation



Internal Meeting

- Pursuant to the collective bargaining agreement and relevant laws and regulations, when there are significant operational changes, the company shall communicate with the employees and union representatives through the staff meetings, plant operation meetings, or through other suitable channels.
- There has been no major change in business operation that might have affected employee rights in 2022.



Employee Seminar

- We advocate internal rules and regulations, collect and reorganize employee opinions, and then forward them to each responsible unit for improvement.



Occupational Safety  
& Health Committee

- OUCC labor representatives of total 7 account for 50% of the Occupational Safety & Health Committee.
- All health and safety issues are regulated by the Occupational Safety & Health Committee.



Timely Manner

- **Human Resources Dept.**  
Taipei Office: (02)2719-3333  
Linyuan Plant: (07)641-3101

## 2022 Employee Seminars in Linyuan

Type	Times	Person	Participation rate
Labor union representatives communication	4	23	64%
New-employee seminar	1	41	76%
Departmental seminar	2	23	88%

## 2022 Important Labor Resolutions

In 2022, OUCC reached relevant ESG resolutions with employees via labor-management meetings:

- ✓ As the year-end dinner party was suspended due to the pandemic, the company exchanged the subsidy amount for the dinner party with gift vouchers as a recoupment.
- ✓ The upper limit of the business trip is increased to 1.5 hours/one way, and the salary adjustment operation incorporates simultaneously the inspection of operator-level job allowances, salary gaps between grades/performance appraisals, price fluctuations, etc., to improve the care for personnel.
- ✓ Assess the equipment in the factory and the parts that need to be promptly improved, to provide a good working environment; plan to video record the routine work to preserve the important experience and technology of the plant.
- ✓ The annual assessment is based on comprehensive considerations of capability performance, job functions and the like to create a good competitive atmosphere within the unit.
- ✓ Strengthen the promotion of compliance with attendance regulation, the subsidy policies for business trip and transportation of the second permit examination, etc., to complete the management.



## Human Rights Protection

OUCC actively adheres to the core spirit of the "Universal Declaration of Human Rights," the "ILO Declaration," the "United Nations Global Compact" and "Responsible Business Alliance Code of Conduct." We abide strictly by all labor-related laws and regulations. Human rights issues are included in the assessment and consideration of all aspects of our operations. OUCC has established a diversified work environment where everyone receives fair treatment and is given equal rights and opportunity. This includes all employees, suppliers, and community members.

### Human Rights Commitment of OUCC

OUCC actively adheres to the core spirit of the "Universal Declaration of Human Rights," the "ILO Declaration," the "United Nations Global Compact" and "Responsible Business Alliance Code of Conduct." We have established the "Human Rights Policy of Oriental Union Chemical Corporate" and strictly comply with government regulations on labor and human rights. In all aspects of our operations, we incorporate human rights considerations and assessments, covering employees, suppliers, community members, etc. We strive for fair treatment, equal opportunities, and a diverse working opportunities and environment where everyone is respected.

Relevant regulations are available to employees, which include "Work Rules," "Rules Governing Personal Information," "Rules Governing Employee Grievances," and "Act of Gender Equality in Employment and Sexual Harassment Prevention, Grievance, and Discipline."



## Human Rights Training

With human rights education courses added to safety and health training to help employees understand the basic principles and values of human rights, OUCC strives to improve the awareness and importance of human rights among employees.

In 2022, OUCC's human rights-related advocacy education included gender-friendly care and labor rights. A total of 239 employees participated in 163 hours of training. In addition, we have published the relevant measures in the document system, such as the "Work Rules," "Rules Governing Personal Information," "Rules Governing Employee Grievances," and "Act of Gender Equality in Employment and Sexual Harassment Prevention, Grievance, and Discipline" for employees to inquire.

### Employee Ethical Behavior

We value the ethics and integrity of our employees who are requested to sign a "Letter of Consent" when joining the company. This document becomes part of their personnel profile and the declaration for complying the company rules and regulations, personnel management stipulation, as well as the commitment for non-disclosure of the company business confidentiality. The document content is published at the company website and is available for examination and reference of all employees.

At new employee orientation, the education, training and tests on the Code of Ethics are conducted. More, all employees are required to participate the annual training on Code of Ethics and the Best Practice Principles for Corporate Business Management, so to strengthen employees' moral behavior.

## Human Protection Mechanism



Stakeholder Types

- Such as consumers, customers, employees, other workers, and local communities.
- High-risk or vulnerable groups: such as children; human rights defenders; indigenous peoples; migrant workers and their families; ethnic or racial; religious and linguistic minorities; people who may be discriminated against due to sexual orientation, gender identity, gender expression, or sexual characteristics; and people with disabilities or women.



Fair Employment

- Provide open, fair, and impartial job opportunities to all applicants in accordance with the Employment Service Act.
- The Human Resource Evaluation Committee has been established to administer the Rules Governing Human Resource Evaluation and matters that involve commendation or disciplinary action.



Labors' Freedom and Rights

- Domestic and foreign employees are respected for their freedom of choices and occupational rights, and are not forced or pressured to conduct labor activities, nor will their freedom of movement be limited.
- Employment agreements with foreign employees are written in their native language, in which the terms and conditions of employment are in accordance with local laws and regulations or better provided, and no arbitrary changes are made to the content of an employment contract.
- All employees are treated with equal care and protection irrespective of their nationality.



Gender-friendliness

- The "Act of Gender Equality in Employment and Sexual Harassment Prevention, Grievance, and Discipline" and "Mechanism for Handling Grievances of Sexual Harassment" are stipulated to maintain gender equality in employment.
- Education and training on gender equality in employment and sexual harassment prevention.
- All the appropriate preventive, corrective, and disciplinary measures against sexual harassment are firmly applied and all employees have unimpeded access to a clear grievance channel to ensure their best interests.
- OUCC is vigorous in its advocacy and promotion of the anti-gender discrimination policies and mechanism to prevent workplace violation of sexual harassment.



Personal Data Security

- The Rules Governing Personal Data have been clearly set down for the preservation of confidentiality and the management of personal data, as well as to ensure the safety and legality of OUCC for the collection, processing, usage, and international transmission of personal data.



Multiple Grievance Channel

- Abide strictly by the Rules Governing Employee Grievance and establish a smooth grievance channel.
- Stakeholders may file for appeal through the "Anti-corruption mailbox" at OUCC's official website.
- There were no complaints in terms of human rights in 2022.



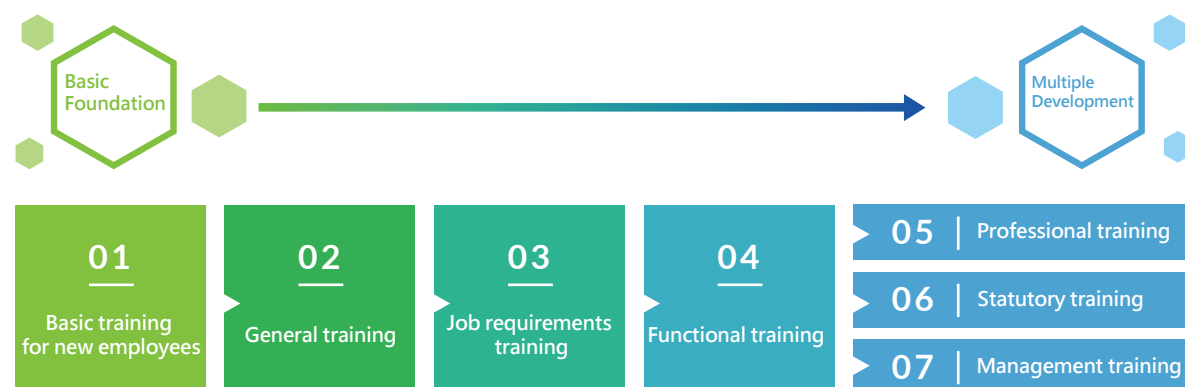




## Talent Training

To help employees maximize their potential, we have established a complete education and training system which maps out plans for short-, medium-, and long-term professional career development. In addition to increasing internal cohesion, the professional potential of employees is inspired and enhanced, and grow simultaneously with the company.

### OUCC Education and Training System



- 1 Basic training for new employees :** Consolidate employees' knowledge of company business operations
- 2 General training :** Improve the professional capability of the talents
- 3 Job requirements training :** Gradual training to nurture the ability needed for the tasks
- 4 Functional training :** Enhance the continuing employment ability of talents
- 5 Professional training :** Provide relevant professional training, in line with company strategies, and reserve talent competitiveness
- 6 Statutory training :** Strictly review the operation and management qualifications required for each position in accordance with the regulations related to environmental safety and health
- 7 Management training :** Advocate mid- and high-level management based on individuals' functional development requirements



## Employee Training Hours

Type of Employee	Gender	2020		2021		2022	
		Total (hour)	Average (hour)	Total (hour)	Average (hour)	Total (hour)	Average (hour)
All Employee	Male	9,607	31.71	7,582	25.88	9,951.5	30.71
	Female	996	26.21	666.5	18.51	785	19.15
Senior Management	Male	65	9.29	107.5	11.94	99.5	9.95
	Female	22.5	7.5	23	7.67	28.5	14.25
Mid-Level Management	Male	1,013.5	27.39	1,001.25	23.84	988	20.16
	Female	36.5	18.25	56.5	18.83	42	14
General Staff – Indirect Labor	Male	6,549.5	36.19	3,822.75	22.49	2,858.5	18.44
	Female	937	28.39	587	19.57	714.5	19.85
General Staff – Direct Labor	Male	1,979.5	25.38	2,650.5	36.81	6,005.5	54.6

Note:

- Definition of employee: General employee-grade 8 and down, mid-level management-grade 5-7, senior management-grade 4 and up.
- Average hours in training: Total hours of training for the employee category / Total number of employees in the category.

## Training Investment Overview

Item	Unit	2020	2021	2022
Total employee training hours	Hour	10,603.5	8,248.5	10,736.5
Average employee training hours	Hour	31.0953	25.0714	29.4151
Total employee training amount	NT\$ million	0.91	0.676	1.226
Average employee training amount	NT\$	2,668.62	2,054.71	3,358.9
The proportion in total revenue	%	0.0093	0.0046	0.0096
Total Revenue	NT\$ million	9,798.912	14,673.731	12,770.275
Total number of employees	Person	341	329	365

Note:

- Total revenue is calculated by individual revenue statistics.
- Average employee training hours = Total employee training hours / Total employee
- Average employee training amount = Total employee training amount / Total employee
- The proportion in total revenue = Total employee training amount / Total revenue





## Professional Talent Training

A potential talent and leader nurturing mechanism has been implemented to search for competent successors for existing supervisory and management posts.

We encourage talented workers to register for MBA degree programs at domestic universities to improve their management skills. The COVID-19 pandemic caused serious changes in many different industries in 2022. However, this did not affect our employee training programs.

### Assistance to Youth during the Pandemic: The Flagship Employment Program

The outbreak of the global COVID-19 pandemic in 2020 caused many companies to tighten their employment plans, which had an impact on new graduates and youngsters with little experience in the seeking of employment.

To properly fulfill our corporate social responsibilities, OUCC has participated in the Workforce Development Agency's Youth Flagship Program. Our recruitment efforts remain the same under pandemic pressure, and our main recruitment targets at new graduates and those within five years of experience. This provided employment opportunities for young people in domains of chemical research & development, methodology design, production process, logistics, environmental protection and the like.

- Comprehensive industry fundamental training, safety training, core general knowledge courses, as well as various professional OJT training allow new employees with little experience to learn from practice, and practice from learning. By incorporating the bi-weekly work journal, the real-time learning status can be tracked to provide feedback to the manager for further course adjustments proceeding in line with the aim of practical learning.
- Throughout this Program, 38 young people aged under 29 were hired, and results were outstanding in both training and work performance, and a total of 33 authorized licenses were obtained.
- In 2023, we have applied to the Department of Labor for an increase of 9 available posts, continuing to serve as a cradle for new talents training in the industry.

### The AI Program for High-level Managers

#### 1 AI Course

- OUCC has anticipated the AI development trend and invested in artificial intelligence and big data analysis. Senior executives were offered to participate in the courses the Taiwan AI Academy organized since 2019. We expect our senior executives to take lead in strengthening OUCC's competitiveness.
- We have dispatched 9 officers to participate in the Taiwan AI Academy courses. The training period is up to 3 months, and the cost per person is approximately NT\$50,000. The Company fully subsidizes the course fee of NT\$432,000.

#### 2 Transformation and Innovation Consensus Camp for Senior Executives

- We provide officers cultivation and successor training in response to the green, carbon reduction, and new materials sustainable development policy.
- We offer training programs on executive management functions covering sales, R&D, production, logistics management, and sustainable talents; we use R&D to drive transformation, and build up a consensus for sustainable development to keep OUCC moving forward.

#### 3 Net Zero Talent Development

- Cultivate net-zero professional talents and integrate climate issues into governance strategies and crisis management by providing the knowledge, tools, and technologies required for climate governance to enhance the Company's advantage in net-zero trend.
- Requirements for systematically promoting net-zero talents shall include 3 major areas:
  - (1) Net-zero related legal provisions and standards;
  - (2) Net-zero related system management, audit procedures, and techniques;
  - (3) Net-zero related science and technologies.

### Professional Training Course

#### 1 Specialty Chemical (SC) business sales & negotiation workshop

Strengthen the sales negotiation skills for SC businesses and improve service capabilities as the mass new product lines such as polyetheramine (PEA), ethylenediamine (EDA), semiconductor-grade carbon dioxide (sel-CO<sub>2</sub>), and ethylene oxide formulation (EODII) have successively launched production.

#### 2 Electronic-grade product training plan

To well prepare for the target customers of electronic-grade products, the employees obtained relevant training to enhance their professional know-how.

#### 3 AI training plan

Launch the AI training plan, arrange for senior executives to understand the AI and big data operations, and lay a solid foundation for digital transformation.

### To End with the Start, Advance the Campus, Build Up the Brand

In 2022, OUCC participated in the "Enterprise Promulgation" and "Talent Recruitment Expo" the campus talent recruitment activities to illustrate OUCC's corporate culture, job vacancies, and development opportunities to the students, to forge closer ties between businesses and students.

In addition, the corporate image, products, business philosophy, etc., were conveyed to the participating students through the booth displays. The event also allowed students to fill in their resumes online. On the same day, OUCC's R&D personnel was on site to help solve the students' intractable problems, and totally overturn their perception of the chemical plant, with active and vibrant interaction.







### Industry Academia Collaboration - Learning from Each Other

In the form of industry academia collaboration, OUCC provides internships to the students from the local colleges proximity to its operation sites, to enable those Sr. students of the Chemical Engineering department to familiarize themselves with the industry from the experience.

With the proactive "Approach and Invite" strategy for recruitment, OUCC contacts with the professors of the chemistry related departments of schools, to invite the professors and students to know more about OUCC. One activity is briefing the students on OUCC job contents and work environment by its R&D, QC & analysis to equip the students with better understanding of how to practice what they have learned in advance. OUCC senior executives are also arranged to answer questions from the students. Gradually the network of industry academia collaboration is thus established.

### Return on Investment (ROI) of Talent Training

**Behavioral Level (L3) :** Reaping the results of learning

- **Program for the enhancement of the power of reading :** A book "The Foundations of Industrial Safety Rudiment " is selected for key units such as R&D and production, which is aimed for them to integrate the knowledge gained into daily operations.
- **The Youth Flagship Program :** Emphasizing hands-on learning through on-the-job training provided by each unit to nurture seeded talent and instill OUCC culture.

**Result Level (L4) :** Changes and contributions made to the organization by the employee  
(Please refer to the aforementioned Professional Training Course)

### Regular Performance Evaluation

OUCC has developed a comprehensive and diverse performance evaluation system with clear regulations on employee performance evaluation, rewards, and punishments, to ensure that each employee's performance is consistent with the company's overall goals.

OUCC has established the "Rules Governing the Payroll" as the basis for compensation evaluation and salary adjustment for all employees. By actively grasping the salary level of the industry market and regularly reviewing the salary policy of OUCC to share bonuses with employees when they gain profits, the measures have effectively attracted and retained outstanding talents. In 2022, 100% of employees, including grassroots employees, employees at all levels, and management levels, participated in performance evaluations.

### Performance Evaluation Management Mechanism

Personnel	Item	Frequency
New Recruits	Employees who have passed the probation period, yet with an evaluation period less than one year	Base on the date reporting to work
	New recruits are evaluated for qualification after a 6-month probation period	
All Employees (Note)	An annual comprehensive evaluation resulted from each employee's absent status, leadership, work capability and performance, etc.	Annually

Note: All employees do not include new recruits

### Sound Pension Mechanism

OUCC has convened regular Retirement Reserve Supervisory Committee meetings to review the allocation and use of pensions and fully protect the rights of retired employees according to the "Labor Standards Act" and the "Labor Pension Act." In addition, a retirement system covering 100% of employees has been formulated to ensure that employees can maintain a certain quality of life after retirement.

In 2022, a total of NT\$77,907 thousand in pension reserves were deposited into the designated account. By the end of 2022, the amount in the designated account for labor pension reserves reached NT\$162,553 thousand. We comply with the provisions of the Labor Standard Act to regularly evaluate the pension reserves every year, which is sufficient to cover the pension preparations for retired employees.

We support our employees and help them start new lives after retirement. Before retirement, we share and exchange all the information they need to facilitate the proper planning of their finances and their social and leisure lives as well. In addition, we have established various communication channels for our retired employees to keep in touch with each other to share health management and exchange ideas, to tighten the emotional bonds of the retired employees and the company, indirectly providing a channel for retirement life planning and communication, so that employees may live a more fulfilling and joyful life after retirement.

### Labor Pension System

#### Old system

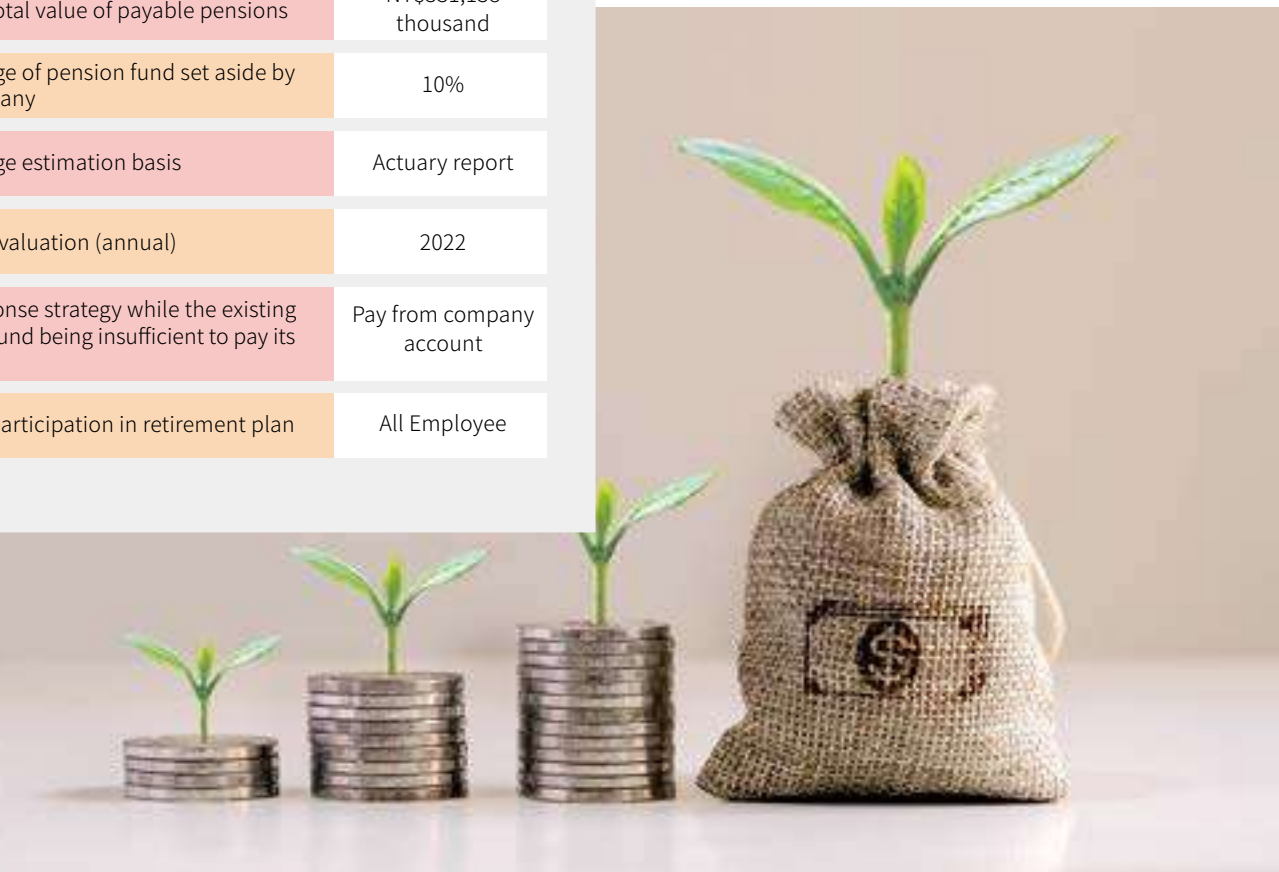
10% of the total salary is allocated to the pension fund per month and deposited to the Bank of Taiwan Trust Fund Special Account designated by the government.

#### New system

According to the law, 6% of the monthly pension is paid to the employee's account in the Bureau of Labor Insurance according to the salary scale.

### List of OUCC's Pension Plan

OUCC's total value of payable pensions	NT\$331,138 thousand
Percentage of pension fund set aside by the company	10%
Percentage estimation basis	Actuary report
Time of evaluation (annual)	2022
The response strategy while the existing pension fund being insufficient to pay its debts	Pay from company account
Level of participation in retirement plan	All Employee





## Employee Compensation and Benefits

OUCC leads the industry in the provision of double group insurance. The coverage includes life insurance, accident insurance, hospitalization & medication, and cancer. Employees do not need to pay to be able to enjoy the complete and overall benefit. The employee benefits expenses totaled more than NT\$69 million in 2022 with welfare subsidy of more than NT\$22 million.

In 2022, the average salary of OUCC's new grassroots was 1.67 times the minimum wage in Taiwan (1.65 and 1.78 times for males and females, respectively.) In addition to paying a salary above local minimum wage, the pay raise is also offered based on the results of annual performance evaluation. The company willingly shares the profits with its employees.

Basic salary ratio with Taiwan	Male	Female
Taiwan : OUCC	1:1.65	1:1.78

## Full-time Employee Benefits for Non-supervisory Positions

Item	2021	2022	Compared to the previous year
Number of full-time employees	314	324	3%
Average salary	1.061 million	1.009 million	-5%
Median salary	0.981 million	0.928 million	-5%

Note: The numbers are calculated based on the filed salary data for full-time non-managerial employees of listed companies requested by Taiwan Stock Exchange.

## Employee Welfares

The OUCC Employee Welfare Committee, which in addition to the lawful benefits, arranges welfare activities for the employees that include an annual banquet, scholarship grants, subsidies for activity, birthday, meal allowance, wedding, funeral, childbirth, monetary gifts for three public festivals, the year-end, as well as group insurance. In addition to health checkups and group insurance for employees and their families, we also organize annual employee trips and other activities for employees' physical and mental health.

The year-end banquet, which is widely popular among the employees, has been cancelled since 2020 due to the pandemic. However, OUCC still insists on holding recognition and appreciation ceremony for senior employees. Service awards are presented based on the employees' seniority. Besides the ceremony, a personal web page of the award for each employee is created and award presentation pictures are taken. All of these activities and awards are meant to honor their glory.

## Employee Welfares Expenses

Item (Unit: NT\$)	2020	2021	2022
Pensions	21,700,882	19,766,617	20,321,735
Insurance expenses	30,659,324	32,056,952	32,341,681
Employee (profit) recompense	-	16,724,265	1,154,937
Special bonuses	-	14,895,240	4,490,332
Shuttle bus	9,169,059	9,562,050	10,319,094
Employee health checkup	1,170,607	1,282,618	1,029,050
Total	62,699,872	94,287,742	69,656,829

Note: Employee welfares include regular appropriation (pensions, insurance, business transportation, and private healthcare), as well as other employee subsidies, such as housing subsidies, interest-free loans, public transport subsidies, educational grants, and dismissal subsidies, yet exclude the costs of education and training, protective equipment, staff or expenses directly related to the job.

## Welfare Measures List

Welfare Measure	Description	Subsidy Amount (NT\$)	Number of Beneficiaries (Person)
Marriage subsidy	Staff marriage subsidy, NT\$2,000 / person	6,000	3
Childbirth subsidy	Employees childbirth subsidy, NT\$1,000 / per birth	6,000	6
Hospitalization subsidy	Staff hospitalization subsidy, NT\$1,000 / time	7,000	7
Staff travel subsidy	Full subsidy for each employee	574,881	91
	Lineal family members, NT\$1,600 / person (maximum 3 people)	140,800	88
Self-reliant tour	Self-reliant tourism and academic events	12,955,850	391
Club activity	Encouraging employees to organize social group activities, each social group for NT\$10,000 / year, Taipei Office social group for NT\$13,000 / year	27,000	60
Birthday celebration subsidy	Staff birthday celebration, NT\$2,000 / person	698,000	349
Retirement Benefits Application	Employee retirement gifts	230,892	11
Funeral subsidy	Staff NT\$50,000	-	-
	First degree of kinship NT\$5,700 / per person	57,000	10
Group insurance	Life insurance, personal accident insurance and medical insurance, hospitalization insurance	984,961	391
Festival Bonus	A festival bonus of NT\$5,000 for each of four holidays (New Year, Dragon Boat, and Moon Festivals, Labor Day)	6,674,000	391

Note:

1.New Employees' welfares are provided on proportion.

2.The total amount of employee welfare subsidies invested was NT\$22,362,384 in 2022.

## Employee Transportation Fee Subsidies

OUCC provides transportation fee subsidies for Linyaun employees and employees in areas where shuttle buses don't reach. A total of more than NT\$1.5 million was subsidized in 2022.

	2020	2021	2022
Subsidy amount (NT\$)	1,610,400	1,539,136	1,500,818

## Club Activity

The OUCC does not have a large number of employees but we are as close as family. Our employees develop all kinds of associations for exercise and stress relief. In 2022, due to the epidemic, most club activities are suspended to avoid group gatherings. A total of 2 clubs was subsidized in 2022, with a subsidy of NT\$27,000.

When a club is formed, the Director of the club files an application and a prospectus for annual club activity, its budget, club members list, the purpose and an introduction of the new club to the Employee Welfare Committee for resolution. Grants are provided to the officially established clubs.



Satisfied Customer



The OUCC regards "meeting customer needs and serving" to be a vital necessity. In addition to providing high quality products and technical services, OUCC actively listens and responds to customers' encountered problems in application, provides customized services, promotes customer-oriented product development and technical innovation, so to build a close and trusting relationship with each other.

We take great care to protect the security of data and intellectual property rights of our customers. We have a meticulous control mechanism and no incidents of leakage or infringement of customer privacy occurred in 2022.

### Customer Satisfaction Management

We value customers' satisfaction. In addition to irregular customer visits, annual customer satisfaction survey and irregular dealer (sales) meetings, the quality management meeting is held every six months to ensure customer satisfaction, and the demands and requests of customers on product quality are properly responded.

#### Customer Satisfaction Survey

Product Type	Satisfaction Rate	Survey Questionnaire Recovery Rate
Gas	Average score 4.71 points (out of 5 points)	78%
EG&EO	The average score is 33.4 points (out of 35 points)	100%

#### Introduction to Customer Feedback / Comments Handling Form

OUCC enhanced customer service efficacy through IT, specifically improving the "customer complaint handling procedure." Currently, we have completed the development of the new "Customer Feedback / Comments Handling Form" on the online official document system to enhance the service satisfaction.

Item	New form	Old form
Change of name	Customer Feedback / Comments Handling Form	Customer Complaint Handling Form
Printed format	Yes	No
Online discussion with processing staff	Yes	No
Allocation of responsible unit	Confirmed by the applying unit and approved by the manager after discussion with processing staff	Distributed by Technical Services Department
Method of reporting to the President	Whether or not reporting a case to the President is decided by the department manager	All such cases must be reported to the President immediately
Applicable unit	All EG, GAS, EOD product departments	All EOD product department
Response time to customers	Fast	Slow

#### Remote Storage Tank Monitoring System

OUCC independently developed the "remote customer storage tank monitoring system," which enables us to grasp the liquid level information of customers' storage tanks in real time through IoT technology, so that the delivery of tanker trucks can be properly scheduled. The system, which is developed to increase the efficiency of customer service, is also friendly to the environment by increasing the unloading capacity, shortening delivery time and avoiding supply interruption, providing more stable customer services.

Since the number of trips can be effectively evaluated and counted, by way of combining the delivery, not only the transportation costs can be significantly saved, the greenhouse gas emissions generated by transportation can also be greatly reduced. The estimated GHG emissions reduction is 1,983.735 t-CO<sub>2</sub>e in 2022.

	Total number of delivery	Average MT / truck	Note:
Before installation	7659	12.75	Note: 1. Calculation of carbon reduction: 0.961 * 732 trips * 14.1 MT * 200KM = 1,983,735 Kg/MT-KM 2. Calculation of savings on delivery fee: 732 trips * 11,464 = NT\$8,391,648 per year 3. Average delivery fee in 2022: NT\$11,464; carbon emissions of delivery: 0.961 Kg/MT-KM; average delivery distance per vehicle in 2022: 200KM 4. "Before installation" refers to the year 2014, "after installation" refers to the year 2022.
After installation	6927	14.1	
Difference	(732)	1.35	
Annual savings on delivery fees	NT\$8,391,648	-	



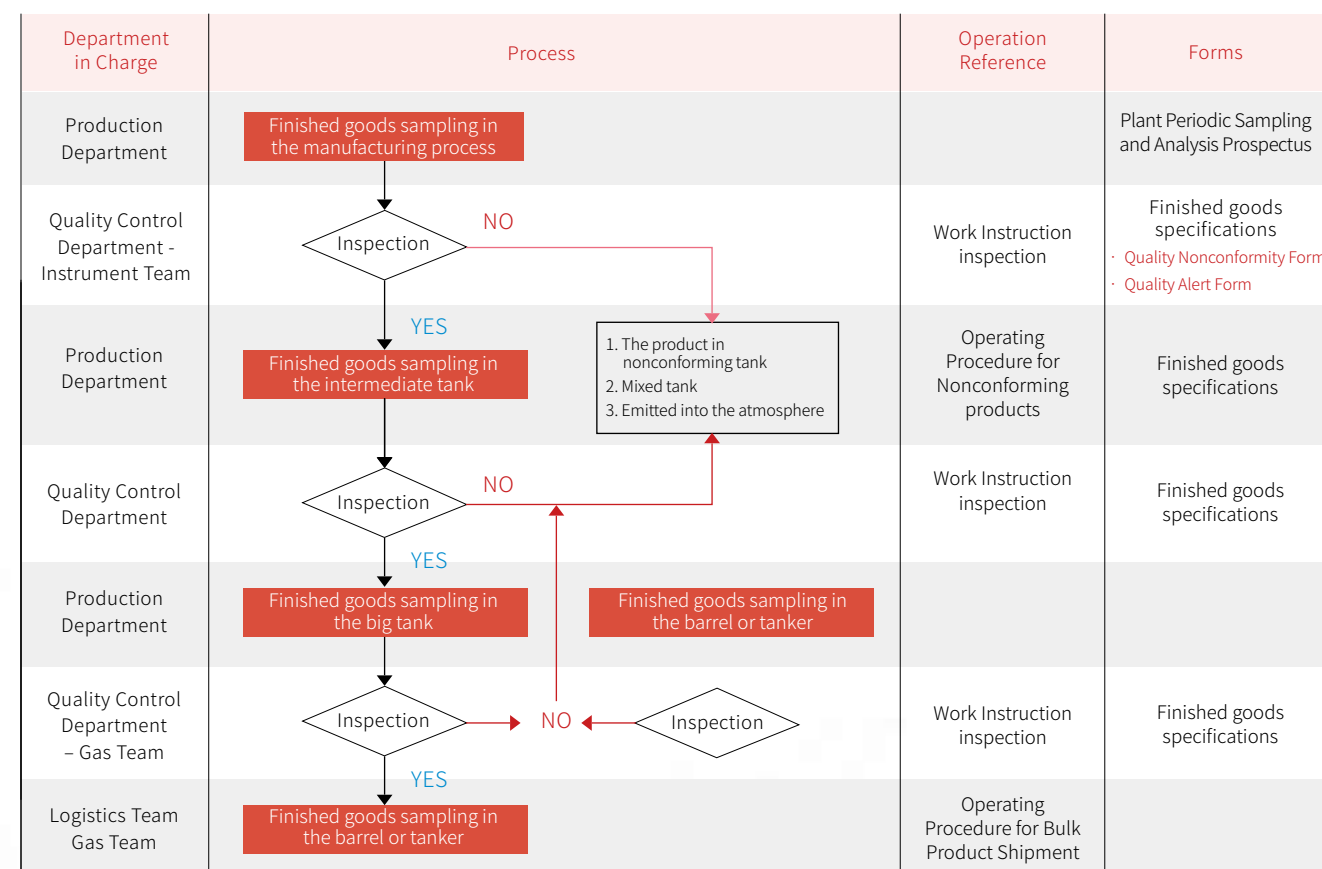


## Rigorous Quality Management

### Quality Management

OUCC have obtained ISO 9001 certification, and excluded the use of heavy metals such as lead and cadmium in accordance with "Restriction of Hazardous Substances Directive (RoHS)." Under a strict quality management, OUCC has earned the trust of its customers with the stable standards for products, and no significant quality events occurred during 2022.

In addition, in order to meet the requirements of our customers and to ensure the compliance of our quality management system, we regularly conduct internal audits every six months and third-party external audits once a year, and draw up improvement measures for any deficiencies during the audits to effectively maintain the effectualness of ISO 9001 Quality Management System.



Note: "Emitted into the atmosphere" refers to Company's gas products - nitrogen, oxygen, and argon. These are non-toxic and are emitted directly into the atmosphere in the event of failure of the finished product inspection. Also, gas is not pumped into the storage tank until it passes analysis. Any gas in a storage tank that fails analysis will also be emitted into the atmosphere. However, the latter has never happened.

## Chemical Supply Chain Management



OUCC strengthens the supplier partner selection mechanism and strives to reduce the negative impact on the environment or society, so as to ensure the labor conditions, environmental behavior and business integrity of suppliers, and to fulfill the supplier's responsibility for sustainable management.



### 2022 Management Results

- 100% of suppliers followed OUCC environmental policy
- The total number of evaluation audits on suppliers was 658
- 100% of freight forwarders passed the evaluation audit



### 2023~2027 Short-term Targets

- 100% of freight forwarders must sign the "Supplier CSR Commitment Form"
- Future evaluation planning of transportation contractors is to be divided according to ESG risk ratings, and lists of the high, medium, low risk the contractors are distinguished
- Existing suppliers must complete an on-site or written evaluation

### Chemicals Supply Chain

The petrochemical industry chain covers the entire process from extracting raw materials such as oil and natural gas to manufacturing final products.

- **Upstream** : Crude oil, light oil, gasoline, diesel, kerosene, fuel oil, lubricating oil refined from crude oil, as well as related drilling equipment.
- **Midstream** : Basic petrochemical raw materials such as ethylene, propylene, butadiene, benzene, phenol, etc., produced by pyrolysis of upstream raw materials as well as the chemical raw materials such as plastics, rubber, and artificial fibers made of the above-mentioned raw materials through chemical reactions such as polymerization, esterification, and alkylation.
- **Downstream** : Daily necessities used in food, clothing, housing, and transportation made of plastic, rubber, artificial fiber, and other chemical raw materials. They include plastic products, rubber products, cleaning agents, artificial fibers, color dyes, adhesives, plasticizers, pesticides, cosmetics, etc., with a wide range of applications.

### OUCC Supply Chain

- **Supplier type** : engineering, equipment, raw materials.
- **The number of Tier-1 suppliers** :
  - Engineering (including labor): 622
  - Non-engineering (equipment, spare materials): 1,940
  - Raw and auxiliary materials (including chemicals): 164





## Sustainable Supply Chain Management

To ensure the integrity and sustainability of business cooperation, OUCC has set up management policies such as "Rules Governing Suppliers" and "Environmental Safety and Health Policy" for supplier management. Suppliers must comply with the "Petrochemical Industry Code of Conduct," ensuring that our suppliers comply with the relevant regulations and set higher environmental and occupational safety and health standards for the petrochemical industry, and build a solid and sustainable chemical supply chain.

- **Before contract signing** : review the "Supplier ESG Survey Form" during the review phase, and inform supplier to refer to OUCC's code of conduct and publicize it to their internal employees.
- **After contract signing** : understand and evaluate the integrity management or code of conduct implementation status via the "on-site audit."

### 1 Strengthen Sustainable Communication and Promotion .....

To strengthen the awareness and execution of ESG of the suppliers and contractors, whom we have worked closely with on labor, health and safety, environment, management, and business ethics to establish a comprehensive supply chain mechanism, aiming to lead supplier partners to commit to sustainability.

We proactively communicate with our suppliers, encourage them to enhance their sustainability management in breadth and depth, and make every effort to contribute. In the future, we will continue to maintain a good partnership with our suppliers, and actively invite our suppliers to respond to social welfare activities and join hands as a positive force in society.

### 2 Sustainable Management Mechanism .....

To ensure that suppliers can understand and assist OUCC to strive for supplier sustainable development, we have designed a CSR self-assessment questionnaire for all our new suppliers, who are required to sign a letter of commitment, so to join us in a commitment to ESG and its implementation.

Sustainable Commitment Management Mechanism	Implementation Ratio (%)
Contractors must sign the "Contractor's Operation Safety Commitment to OUCC while Working in the Plant" to ensure that the contractor understands all the regulations of OUCC upon entry.	100%
New suppliers must sign the "Suppliers' Corporate Social Responsibility Commitments," which covers labor and human rights, environmental protection, and business ethics. A total of 70 new suppliers signed the commitment letter in 2022.	100%
Contractors must sign an agreement with OUCC, committing to the conditions set out in the "Environmental Safety and Health Policy Handbook" and pledging their commitment to safety, health and the promotion of environmental protection.	100%

Note: 2022 Supplier Implementation Ratio = number of suppliers who signed the commitment in 2022/ total number of suppliers in 2022.

### 3 Evaluation Management Audit .....

This OUCC audit process includes record and field evaluations to ensure that suppliers are in compliance with all the relevant laws and regulations. Existing suppliers must receive and complete an annual evaluation, which includes company management, quality, delivery time, price, service, and environmental safety. Suppliers will only be listed as qualified as their rating scores reach the specific standard.

Should an evaluation or material incident occur and also result in damage to the company's reputation, labor safety, product quality, or manufacturing operation, the supplier would be listed as disqualified and suspended. In 2022, 658 trading suppliers underwent written evaluations with none disqualified, and the qualification rate is 100%.

## Transportation Contractor's ESG Audit

The flammable, explosive and sometimes very toxic nature of chemicals carried by tankers makes their transportation a highly risky and hazardous operation, which may lead to serious disaster by way of negligence. An accident can cause loss of life or serious injury, as well as property damage and severe image impairment of the company.

OUCC continues to strengthen transportation safety and crisis management capabilities through contracts and audit mechanisms with outsourced transportation providers, to ensure the safe transportation of chemicals. In 2022, a total of 7 transportation suppliers signed the "Environmental Safety and Health Policy Handbook" and agreed to undergo on-site audits. All have successfully completed the audit with a 100% pass rate.

#### Contract Specification

1. Contracted transport service providers must participate in the Kaohsiung City-Kaohsiung County-Pingtung County diesel self-management program and receive their qualification mark
2. Establish environmental and safety standards
3. A regular "Outsourcing Transportation Safety and Health Quality Audit and Survey" is performed for all the main transport service providers. No transport service provider will be renewed if the evaluation score is below standard

#### On-site Audit

1. Transport company profile and transport policy
2. Security system and policy
3. Work procedures and emergency response
4. Driver qualification (employment / training)
5. Driver qualification review (evaluation)
6. Equipment safety
7. Vehicle management

## Management Results

All the contracted tankers of OUCC have passed the inspection performed by the National Accreditation Body. To enhance comprehensive safety management, we continue to communicate with contracted tankers with the target of all forwarders completing the signing of the "Supplier's CSR Commitment" in 2022. Currently, there are 6 contracted tanker forwarders in total, with the obtainment of the international system as follows:

## Transportation Contractor's ESG Audit

International management system	Number of contracted tanker forwarders	Obtainment Rate (%)	Freight Delivery Ratio(%)
ISO 9001	7	100%	100%
ISO 14001	4	57%	78%
ISO 45001	6	86%	98%

Note: Freight Delivery Ratio = transaction amount of contracted tanker with introduction of international management system in 2022 / total transaction amount of all contracted tankers in 2022.

## Future Goal

In response to ESG management trend, contracted tanker or transport companies will be requested to follow environmental safety and other health-related matters stated in the contracts. They must obtain environmental management system accreditation, or be free of any industrial safety accident within the previous five years. All suppliers are invited to participate in ESG management and development.

## Tank Truck Transportation Safety Planning

The short-to-medium-term plan is to phase out old tank trucks that are over 20 years old to improve transportation efficiency and reduce carbon emissions. We have planned to replace 4 self-use gas tank trucks in 2023. The long-term plan is to promote the installation of tire pressure detectors on large vehicles (in-tire type, installed partly for long-term testing,) to effectively control the condition of tires to significantly reduce transportation hazards and prolong the service life of tires.





#### 4 Enhance Safety Promotion

“Contractor Work Safety Rules” have been formulated to ensure the safety of personnel and equipment at the plant site. The rights and obligations of contractors working in the plant are specified in detail. One of the requirements is that all contractor employees entering the plant premises must be qualified and hold work safety permits to ensure the safety of personnel as well as the work environment.

OUCC organizes the Contractor Safety Conference regularly to conduct two-way communication on safety matters through the meeting. The OUCC internal units will convey factory regulations, environmental safety operations key points, etc., and conduct co-experience sharing of the OUCC supervision and contractor management, which would be followed by the extemporaneous motions for problems discovered and improvements review to ensure the safety of the workplace.

#### 5 Preference for Local Suppliers

In addition to its own production, OUCC prioritizes the procurement of its main raw materials such as ethylene, oxygen, ethylene oxide, liquid ammonia and fatty alcohol from selected domestic suppliers and uses imports as a supplement. In 2022, local procurement amounted to NT\$1.06 billion, accounting for 76%(Note 2), which effectively promoted economic development in Taiwan.

Note:

1.Domestic suppliers are defined as manufacturers registered in Taiwan, conducting transactions in the local currency (New Taiwan Dollar, TWD).

2.The purchase amount does not include raw and auxiliary materials.

3.2022 percentage of procurement amount from domestic suppliers = procurement amount from domestic suppliers in 2022 / total procurement amount in 2022 x 100%

#### 6 Practice Green Procurement

Practicing green procurement and consumption, OUCC establishes procurement specifications and equipment standards, prioritizing products with energy-saving and water-saving labels or other government approval. For example, the energy efficiency of electrical motors must comply with CNS14400 IE3. Achieve electricity, water, and energy conservation through the green procurement process. In 2022, the purchase of green-certified items, including LED lamps and IE3 specification motor rotating equipment, reached NT\$12.5 million, with 100% green procurement rate of LED lighting and rotating equipment.



In the **2022** Safety Conference,  
the issues promulgated by the Environmental Safety  
unit were :

- COVID-19 pandemic control measures
- The advocacy event of hazard prevention and safety and health awareness for plant overhaul
- Case studies for the accidents and incidents occurring in neighboring factories in the industrial park
- Training for industrial park communication network and online notification system for confined space work by Labor Inspection department
- Bi-weekly safety meeting for contractors and on-site supervisors



# Chapter. 04

## SOLID CONTRIBUTION

**OUCC** has inherited the business philosophy of "sincerity, diligence, thrift, prudence, and innovation" from the Far Eastern Group. In a new era full of challenges, we continue to seek innovation and changes to face global issues, such as global climate change, the water and energy shortages as well as social participation. With courageous, innovative spirit, and modest attitude, we are committed to the innovation of sustainable environment, applying strategies through "energy saving & carbon reduction for sustainability" attitudes and actions.



**2022**  
Sustainable  
Performance

- Reduced carbon dioxide by **1,910** t-CO<sub>2</sub>e per year
- Conduct **GHG Scope 3** inventories
- **The first** company in Taiwan to introduce **ABR technology**
- NT\$**68** million was invested to set up a wastewater recycling system. The current actual water consumption is around **269** MT/day, with a wastewater recycling rate of more than **55**%
- Establish a waste removal and transportation platform
- Strengthen waste management and control, significantly increase the recovery of steel barrels. The average recovery over the past three years was 87.49 MT, with **86.7** MT recovered in 2022.
- Donations to local charities and disadvantaged minority groups amounted to a total of NT\$**3.92** million



## Energy Management Strategy



We at OUCC fully understand that "energy saving" and "intelligent operation" are vital for enterprises that are striving to adapt their operations to a low-carbon economy, and also achieve sustainable operation. To this end, we have introduced the ISO 50001 Energy Management System, improve the cycle through PDCA, keep track of energy usage status, work out appropriate energy management goals, improve energy efficiency at the plant sites, and reduce our greenhouse gas emissions.

## OUCC Energy Policy



Review energy consumption indicators; provide resources to support energy saving



Abide by energy-related regulations; 100% participation in energy and CO<sub>2</sub> reduction



Continuously improve energy performance; enhance energy efficiency



Promote clean production processes; promote energy conservation to reduce costs

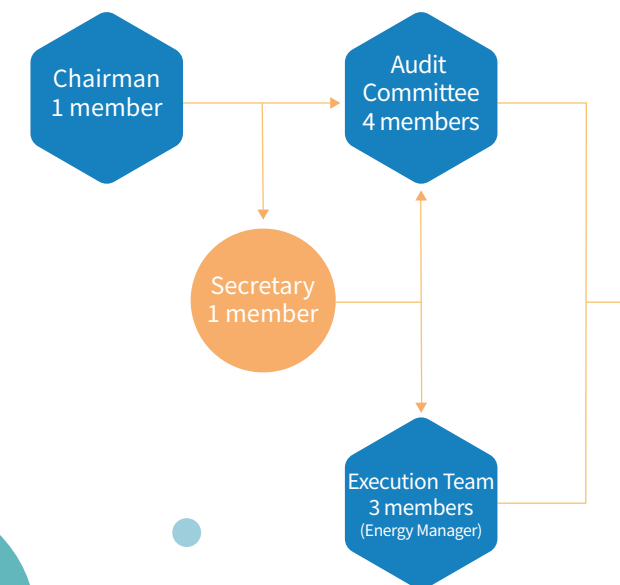


Dedicate efforts to achieve objectives and promote green enterprise development

## Energy Saving and Carbon Reduction Committee

In order to promote the energy saving measures in all factory sites, OUCC established a cross-departmental Energy Saving and Carbon Reduction Committee and sets out the "Procedures for the Organization of Energy Saving and Carbon Reduction Committee" and other mechanisms. Working meetings are held on a quarterly basis to ensure the goals are reached. A variety of energy saving practices are implemented in order to achieve the goals of reducing greenhouse gas emissions and further reaching net-zero emissions.

## Organizational Structure of the Energy Saving and Carbon Reduction Committee



Note: The committee is chaired by the chief plant manager of the Linyuan plant, or a director appointed by the President. 4 audit committee members are elected from amongst the company department managers (or above) and may also be appointed by the President or chairman of the committee.

Instrument Team

S.H.E. Dept.

Electrical Engineering Team

EOG Plant

Mechanic Team

GAS Plant

Engineering Design Dept.

EA&EB Plants

Administration & Logistics Dept.

EOD Plant

Procurement Dept.

EC/CO<sub>2</sub> Plants

Human Resources Dept.





Carbon Management Targets

Schedule	Target
2022 Results	<ul style="list-style-type: none"><li>Take 2015 as the base year, 1% reduction as the average annual target</li><li>Carbon reduction approx. 1,910 t-CO<sub>2</sub>e in 2022, with a target achievement rate of 0.6%</li><li>2017-2022: cumulative reduction of 85,140 t-CO<sub>2</sub>e, of actual reduction rate 26.53%; the target achievement rate 100%</li></ul>
Short-term (2023)	<ul style="list-style-type: none"><li>Take 2015 as the base year, 1% reduction as the average annual target</li></ul>
Mid-term (until 2025)	<ul style="list-style-type: none"><li>Annual reduction target: 2% per year.</li><li>Evaluating and planning high-efficiency, low-carbon cogeneration system, and to purchase RECs</li></ul>
Long-term (until 2030)	<ul style="list-style-type: none"><li>Emissions of 2030 reduced by 35% compared to 2015</li><li>Planning the achievable targets based on Climate Change Act and the schedule of carbon reduction and zero emissions proposed by the government's Industrial Response Team</li></ul>

Note:

- We have implemented a greenhouse gas inventory since 2015, which is set as the base year, with the benchmark greenhouse gas emission i 320,946 t-CO<sub>2</sub>e.
- The carbon management target calculation covers Scope 1 and Scope 2.

Greenhouse Gas Emission

	Unit	Taipei	Linyuan	Total
Scope 1	t-CO <sub>2</sub> e	2.76	30434.4049	30437.1649
Scope 2	t-CO <sub>2</sub> e	54.68	316170.3884	316225.0684
Total emission	t-CO <sub>2</sub> e	-	-	346662.2333
Number of employees	persons	-	-	365
Operating income	NT\$ thousand	-	-	12,770,275
Emission intensity	t-CO <sub>2</sub> e / persons	-	-	949.7595
Emission intensity	t-CO <sub>2</sub> e / NT\$ thousand	-	-	0.0271
Emission collection method	Operational control			

Note:

- The 2022 Linyuan Plant data is verified by SGS-Taiwan and obtained ISO 14064-1:2018 and ISO 14064-1:2006 verification.
- The emissions of the Taipei head office are calculated by self-examination.
- GWP is refer to IPCC (2007) global warming potential value.
- The discharge coefficient is used as 0.509kg-CO<sub>2</sub>e/kWh in 2021.

Emission of Value Chain

Category	Item	Emission (t-CO <sub>2</sub> e)	Description
Category 3	Transportation	47658.3045	<ul style="list-style-type: none"><li>Emissions caused by the transportation of raw materials</li><li>Emissions caused by the transportation and distribution of the organization's products</li><li>Emissions caused by employees' commute</li><li>Emissions caused by business travel</li></ul>
Category 4	Products used by an organization	409282.0071	<ul style="list-style-type: none"><li>The emissions caused by product purchase are the emissions associated with product manufacturing process.</li><li>The emissions from the disposal of solid and liquid wastes depend on the type of wastes and processing methods.</li></ul>

Note: The 2022 Linyuan Plant data is verified by SGS-Taiwan and obtained ISO 14064-1:2018 verification.

Greenhouse Gas Emission (Taipei Head Office)

Scope	Item	2020	2021	2022
Scope 1	Company car fuel consumption (L)	1023	997	1058
	Company car CO <sub>2</sub> emissions (t-CO <sub>2</sub> e)	2.32	2.26	2.76
Scope 2	Power consumption (kWh)	111012	107842	107419
	CO <sub>2</sub> emission from power consumption(t-CO <sub>2</sub> e)	56.51	54.14	54.68
Total (t-CO <sub>2</sub> e)		58.83	56.4	57.44

Note: The above data is converted in accordance with the annual average unit price of the "Oil price data management and analysis system" of the Department of Energy MOEA Office (<https://www2.moeaboe.gov.tw/oil102/oil2017/newmain.asp>).

Greenhouse Gas Emission (Linyuan Plant)

Item (Unit: t-CO <sub>2</sub> e)	2020	2021	2022
CO <sub>2</sub>	36926.6432	37901.5029	30010.7531
CH <sub>4</sub>	35.6400	35.3375	45.7050
N <sub>2</sub> O	3.9634	1.6390	1.6688
HFCs	2821.6516	2821.6516	376.2780
Direct greenhouse gas emissions (Scope 1)	39787.8982	40760.131	30434.4049

Note:

- SF6, PFCs, NF3 emissions are 0 t-CO<sub>2</sub>e
- 2022 Linyuan Plant's greenhouse gas emission data has passed third-party verification and obtained ISO 14064-1:2006 verification.



## Energy Consumption

Item	Unit	2020	2021	2022
Gasoline	Kilo-Liter	9.078	6.4927	5.795
	Gallon	2398.05	1715.49	1530.92
	GJ	296.25	211.89	189.13
Diesel fuel	Kilo-Liter	538.64	61.65	65.62
	Gallon	142295	16286	17336
	GJ	18931	2167	2306
Power	kWh	459206400	476784000	467971200
	GJ	1653143.04	1716422.4	1684696.32
Steam	MT	307376	335072	387157
	GJ	923991.63	973504.16	1125109.67
Natural Gas	M <sub>3</sub>	253021.5	557997	593762
	GJ	9527.78	21011.95	22358.70
Total energy consumption	GJ	2605889.7	2713317.4	2834659.82
Number of employees	persons	341	329	365
Operating income	NT\$ thousand	9,798,912	14,673,731	12,770,275
Energy intensity	GJ/ person	7641.9053	8247.1653	7766.1913
	GJ / NT\$ thousand	0.2659	0.1849	0.222

Note:

1. All energy sources used by OUCC are non-renewable energy.
2. The energy heating value conversion coefficient is quoted from the Energy Bureau.

## Energy-saving Action Plans

According to the inventory data, 70% of the OUCC greenhouse gas emissions came from electricity. As a response, we set a "power-saving" goal by promoting a series of power-saving measures, looking for suitable fuel- and steam-saving solutions. With effective management, the actual annual power saved was about 3.753million kWh in 2022, with a 0.8% power-saving rate.

### Power Management Target and Action Plans

Schedule	Target	Strategy
Short-term / Annual Plan (2023)	The annual power saving rate of 1%	<ol style="list-style-type: none"><li>1. Street lamps renewal in the Linyuan factory area (switching to LED) (2022-2023 inter-year)</li><li>2. Projects of semiconductor grade CO<sub>2</sub>, rooftop solar energy and program controlled electricity distribution</li><li>3. EOG factory circulation water pump (PP-201N) renew project</li><li>4. EOG factory circular gas compressor energy conservation project</li><li>5. EOG factory RTO energy conservation project</li><li>6. ASU#2 main air compressor (MAC) efficiency improvement</li><li>7. EOG factory methane compressor (PR-110) renew project</li></ol>
Mid-term (until 2025)	The annual power saving rate of 1%	<ol style="list-style-type: none"><li>1. Introduction of power-saving equipment, such as frequency converters, inverter motor, and fans, etc.</li><li>2. Optimization of cooling water circulation to save electricity used by water pumps</li><li>3. OUCC has combined the management structure of the energy management system with a cloud-based "Plant Power Monitoring System Platform," to continuously monitor energy usage and seek for energy saving opportunities</li><li>4. Plans have been made to introduce a smart monitoring system to make continuous process improvement and optimization to reduce product unit power consumption rate</li><li>5. Plans have been made for the construction of a co-gen system to reduce the use of outsourced electricity</li><li>6. Procurement of green energy and RECs, evaluation and construction of energy storage equipment.</li><li>7. All employees participate in energy conservation and carbon reduction management activities, continuous planning and implementation of energy-saving and carbon-reduction programs to reduce energy consumption and greenhouse gas emissions</li></ol>
Long-term (until 2030)	The annual power saving rate of 1%	<ol style="list-style-type: none"><li>1. Ongoing improvement in energy efficiency and carbon reduction management</li><li>2. Evaluation for the installation of waste heat recovery &amp; power generation equipment</li></ol>

Note: The annual powery saving target benchmark and the power conservation calculation shall be handled according to the "Settings of Energy Conservation Goals and Implementation Plan Regulation for Energy Users" promulgated by the Bureau of Energy:

- (1) Annual power saving target: over 1%
- (2) Annual power saving rate = annual power saving / (annual power saving + annual power consumption) x 100%





Actively Promote Energy Saving at Linyuan

The feasibility of a high-efficiency low-carbon heat and electricity cogeneration system at the Linyuan Plant is being evaluated, in the hope that the electricity and steam will fulfill all the requirements for production. Furthermore, we aim to comply with the regulation requiring the establishment of a 10% self-consumption of green energy by the end of 2025.

In addition, OUCC makes full use of technological advantages to promote clean processes, using a cloud based "plant power monitoring system platform" to monitor energy use by the plant with the structured approach in search of energy-saving opportunities. Moreover, carbon reduction measures in the office area have been promoted, including electronic administrative operations, monitor and control of photo-copying over the entire factory, and the promotion of a paperless system for online management, contributing towards the reduction of greenhouse gas emission.

2022 Energy Efficiency Improvement Results

Item	Conservation plans	Estimated annual energy saving benefits	Estimated annual carbon reduction
GAS plant	Replace the main air compressor's inlet filter screen for the GAS-II plant (statistics from January to November 2022)	Annual electricity saving of 2.446 million kWh	1245 t-CO <sub>2</sub> e
GAS plant	Gas plant nitrogen compressor (BLNC-7) outlet pipeline enlargement project (statistics from January to December 2022)	Annual electricity saving of 1.236 million kWh	629 t-CO <sub>2</sub> e
Linyuan plant area	Street lamps renewal for the Linyuan plant area (switching to LED) (statistics from July to December 2022)	Annual electricity saving of 61,300 kWh	31 t-CO <sub>2</sub> e
GAS plant	Demand-response-load management measures and power trading platform solutions - planned measures to reduce electricity consumption	Annual electricity saving of 9,790 kWh	5 t-CO <sub>2</sub> e

Energy Saving Improvement Results

Item	Unit	2020	2021	2022
Process Improvement				
Investing Amount	NT\$	521,612,000	100,000	0
Energy Saving	GJ	14094	10,212	35
Equipment Upgrade				
Investing Amount	NT\$	300,000	68,370,000	608
Energy Saving	GJ	3,048	33,302	13,468
Total				
Investing Amount	NT\$	521,912,000	68,470,000	608
Energy Saving	GJ	17,142	43,514	13,503

Note: Estimated energy savings are based on the data reporting to the Energy Bureau, effective the month following the completion of the energy saving measures, and can be calculated inter-year.

Green & Sustainable New Process

OUCC's Linyuan Plant has changed the fuel of the coal fired furnace and the regenerative thermal oxidizer (RTO) system to clean low-carbon fuel (natural gas.) We also installed high-efficiency waste heat recovery technology to reduce fuel consumption and environmental pollution.

Expected Benefits

- Converting the medium-thermal heating furnaces and the regenerative thermal oxidizer (RTO-I/RTO-II) incinerators to natural gas burners and deactivating the diesel pumps are estimated to save 8,169 kWh of electricity and reduce diesel consumption by 600 kL annually. [The projects were completed by the end of January 2021.](#)
- 2021-2022: The cumulative carbon reduction was about 1,052 t-CO<sub>2</sub>e.



The Paving and Rain and Polluted Water Diversion and the Flood Retention Construction in the Plant Area

To beautify the factory surroundings and also to reduce the long-term problem of flooding, the production processing areas around each plant unit at Linyuan were paved and underground discharge pipelines were laid and adjusted at the EOG plant, including:

1. Rain and polluted water diversion was established at the leaked wastewater collecting pit of EO loading station / EG / EA filling stations and the recovery system. Modifications were made to the draining chutes to ensure the separation of rain and polluted water.
2. The drainage system surrounding the plant was reconstructed and a flood retention pond was built.

Expected Benefits

- The paving at each processing area optimizes the surrounding of the Plant area.
- Both the rain and polluted water were diverted to reduce environmental and industrial safety issues, reducing the occurrence of penalty incidents.
- The drainage system surrounding the plant was reconstructed, which improved the long-term flooding problem, and a flood retention pond was also built to cope with the impact of climate change.



### The EOG Plant Cooling Water Pipeline Modification Project

Due to the outdated design of the gas circulating cooler and cooling water tower of EOG plant, there was no way for maintenance personnel to get into the tower to fix an abnormal fan on account of the high temperature resulted from the lack of interior isolation, which caused the cooling water temperature to rise and necessitated the reaction zone to reduce production.

· After reconfirming the overall water distribution and heat loading of EOG, the circulatorwater cooler (TT-201N/TT-201) was changed to be supplied by the #2 cooling water tower (where the inside can be isolated and repaired). **The annual electricity saved is about 6 million kWh, of a saving amount NT\$13.27 million, and the greenhouse gas emission reduction by approx. 3,218 t-CO<sub>2</sub>e per year.**

· 2019-2022: The cumulative electricity saved is about 24 million kWh, of a saving amount NT\$53.08 million, and the greenhouse gas emission reduction by 12,872 t-CO<sub>2</sub>e.

### OUCC's Renewable Energy Development Plan

1. Photovoltaic system: Install a photovoltaic system on the roof of the semiconductor CO<sub>2</sub> plant at Linyuan, with installed capacity of 108.78 kWp and an annual average power generation of 122,000 kWh. As the renewable energy is generated for self-use, the renewable energy certificate is to be obtained. The project is expected to be completed in 2023.
2. Co-generation system: To be partial self-sufficiency in terms of electricity, re-adjust the heat and electricity ratio, and plan a high-efficiency and low-carbon co-generation system in response to future energy structure changes.
3. Medium and long-term plan: Actively evaluate options such as "setup of renewable energy facility (rooftop photovoltaic system)," "purchase green power and RECs," and "setup of energy storage equipment." We expect to meet the regulated requirement of 10% green energy by the end of 2025

### Waste Heat Recovery

In order to save energy, the excess steam emitted at Linyuan Plant will be recovered and used to replace the old screw type chiller unit for air conditioning at EOG control room, the laboratory and R&D buildings, with **estimated annual electricity savings of 2.07 million kWh, and reduction of 1,040 t-CO<sub>2</sub>e per year.**

The cumulative energy savings from 2021 to 2022 amounted to approximately 4.14 million kWh, resulting in a reduction of 2,080 t-CO<sub>2</sub>e.

### The Mitigation of Transportation Emission

To save energy and reduce carbon emission, we encourage employees at the Linyuan plant, the main manufacturing base of the OUCC, to take use of the company shuttle buses, or to join the carpool system for commuting, so as to cut down on the use of vehicles and reduce the indirect emission of greenhouse gases.

#### Action 1 Promote video conference



- Increase the number of video conferences to reduce the frequency of business travel between Taipei and Kaohsiung.
- New multipoint video equipment were added to cloud platform services.

#### 2022 Results

Videoconferences totaled **1,527** times, reduced **66.455** t-CO<sub>2</sub>e.

#### Action 2 Encourage employee commuting via shuttle buses



- Continuing to promote carpooling as an approach to reduce the emissions of employee travel.
- Regulate the use of new-style transportation vehicles within 5 years, to urge the suppliers to replace with new energy-saving models.
- Earlier departure for shuttle buses so as to avoid traffic peaks, shorten travel time, and reduce greenhouse gas emissions.

#### 2022 Results

1. Continue implementing the Kaohsiung and Pingtung shuttle vehicles for the commuting of employees. About **150** employees have taken the shuttle vehicles to work. Reduced greenhouse gas emissions by **128.05** t-CO<sub>2</sub>e.
2. The transportation vehicles' early departure is anticipated to save 50 minutes of transportation time per day, and the transportation time of five vehicles can be reduced by **250** minutes per day.

#### Action 3 Enhancing the fuel efficiency of outsourced tankers



- No outsourced tankers may remain in use for more than 15 years.
- This has encouraged the use of new energy-saving tankers. The greenhouse gas emission and energy used in the transportation process have been effectively reduced accordingly.

#### 2022 Results

In 2022, **15** phase-3 vehicles were replaced with Phase-6 vehicles.





## Resources Recycling



### Water Resource Management

Schedule	Target
Short-term / annual Plan(2023)	<ul style="list-style-type: none"><li>Daily water consumption reduced by 2%</li><li>Daily saving water of 100 MT</li><li>Introducing ISO 46001:2019 Water Resource Efficiency Management System.</li></ul>
Mid-term (until 2025)	<ul style="list-style-type: none"><li>Daily water consumption reduced by 20%</li><li>Daily saving water of 1,000 MT</li><li>Calculate water footprint</li></ul>
Long-term (until 2030)	<ul style="list-style-type: none"><li>Daily water consumption reduced by 50%</li><li>Daily saving water of 2,500 MT</li></ul>

Note: Water consumption baseline refers to daily water consumption volume of 5,000 MT in 2016.

### Water Resource Usage

OUCC Linyuan Plant uses the water from the Fengshan Reservoir rather than the areas suffering from water shortage. The water is treated before use. As located in the industrial park, the plant's waste water is discharged into the industrial sewers and pollutes no water source.

Water Utilization	Ratio (%)
Production plant (EOG/GAS/EA/EB/EC/EOD) public system cooling tower	85.95
Pure water manufacturing for the EOG process	13.7
Livelihood	0.35

To cope with the risk of a water shortage or floods caused by climate change, we have formulated a comprehensive water resource management plan in cooperation with the local government and have also set water resource management objectives to handle emergencies (when implementing water restriction measures, a water outsourcing mechanism will be activated if necessary, otherwise the factory's operation loading will be reduced,) water conservation measures, and introduce the ISO 46001:2019 Water Resource Efficiency Management System in 2023 to improve water use efficiency. Relevant measures also include:

- The cumulative value of the tap water meter (industrial raw water) the plant regularly records and declares: weekly tap water consumption declaration to the Industrial Development Bureau's Drought Emergency Response, monthly water consumption and water resources management information, annual declaration of water resource management information, and annual flowmeter calibration for each water-consuming facility at the plant sites.
- Continue to promote improvement projects in manufacturing process and technology: invested NT\$68 million to build a wastewater recycling system in the Linyuan plant. The production capacity for reclaimed water is 1,000 MT per day, with the wastewater recovery rate up to 70%, which can be used for cooling water tower replenishment.
- In 2022, the total recycled water production was about 97,732 tons/year (about 269 MT/day), and the wastewater recovery rate was about 55.9%. In addition, OUCC also responded to the survey of willingness for the usage of recycled water, intending to utilize 1,500 MT/day and 50% reclaimed water.

### Water Usage

Unit: million L

	2020	2021	2022
Linyuan Plant	2076.578	2104.758	1990.891
Taipei Head Office	0.913	0.862	0.768
Total	2077.491	2105.62	1991.659

Note:

- The 2020-2022 figure is based on the water bill data.
- In 2022, the total amount of water used by Linyuan Plant includes 0 tons of water outsourced.

### The Amounts of Total Water Intake, Waste (Polluted) Water Discharge Disclosed Voluntarily or Upon Legal Request

Type	Description	Statistics (Million L)
Water withdrawal	Freshwater ( ≤ 1,000 mg / L total dissolved solids)	1990.891
	Other water (>1,000 mg / L total dissolved solids)	0
	Total water withdrawal	1990.891
Water discharge	Freshwater ( ≤ 1,000 mg / L total dissolved solids)	483.418
	Other water (>1,000 mg / L total dissolved solids)	0
	Total water discharge (freshwater + other water)	483.418
	Discharge rate (%)	24.2815%
Water consumption	Total water consumption	1507.473
	Change in water storage	0
Water recycled volume	Recycled water volume from production processes	0
	Recycled percentage from production process (%)	0%
	Total recycled water volume	484.888
	Total recycled percentage (%)	24.3553%
Number of uses of a single drop of water	-	1.3217

Note:

- The total amount of water withdrawal includes the outsourcing water during the drought.
- The data of the total amount of water discharge is reported by the Wastewater Treatment Plant of the Linyuan Industrial Park.
- Discharge rate (%) = (total water discharge / total water withdrawal) x100%
- Total water consumption = total water withdrawal - total water discharge
- Change in water storage volume = water storage volume in December 2022 - water storage volume in January, 2022 (if unusual volume changes occur in the current year, such as changes in the volume of water used due to damage to the water storage facilities.)
- The total amount of recycled water includes recycled waste water and recycled steam condensate.
- Total recycled percentage (%) = (total recycled water volume / total water withdrawal) x100%
- The number of uses of a single drop of water = (total water consumed + total recycled water) / total water consumed.



## Water Recycling Measures

We strive to implement the water resources management mechanism in the plant premises through innovative technologies to improve the efficiency of water resource usage and reduce the environmental risks of water shortage and water resource recycling. In 2022, the volume of purchased steam totaled 387,200 MT, and the recycled condensate of 387,200 MT (calculated from 100% of outsourced steam.) The recycled condensate was mainly used as boiler water feeding and supply, with minor used as water supply for the cooling towers.

Wastewater recovery rate up to 70%	· The measures used are different from those of other traditional industries where partial or single recovery is used (such as the restricted recycling of cooling tower wastewater.) OUCC expects to improve the wastewater recovery rate to more than 70%, which includes wastewater from processing as well as from cooling tower.
New technology	· In the recycling process of processing wastewater and cooling tower effluent, a mature membrane filtering technology of UF/RO is applied as treatment, prior to recycling to the production processes in response to government policy on water conservation.
Enhanced recovery efficiency	· To effectively enhance the recovery rate, our plant uses a two-stage RO process which increases recovery efficiency from 50% to 70%, and 1,000 MT per day is estimated to be recovered for the use in cooling towers and pure water processes. · Since the quality of the recycled water is better than that of ordinary industrial water, the reuse of the recycled water for the cooling towers reduces the amount of acid and anti-scaling agents that used to need.

### The First Company in Taiwan to Introduce ABR Technology

The RO process produces very pure water of high economic value, along with the wastewater of high ionic concentration as well as the high COD. RO concentrated water is usually mixed with other low-concentration wastewater in the general water recycling systems, which provides the difficult-to-dissolve organic substance the access to the water environment. In view of the effect of water quality on the environment, OUCC has been the first in the industry to introduce ABR technology for the treatment of concentrated wastewater from the RO process, reducing COD and other environmentally harmful substances, to fulfill our environmental responsibility.

## Wastewater Treatment & Discharge

The chemical plant wastewater contains incompletely reacted raw materials, and the media of solvents. Any wastewater or liquid waste produced in the manufacturing process that has not been properly treated would be a serious hazard should it be discharged into the environment.

In this regard, the OUCC abides by the "Procedures for OUCC production process wastewater discharge," stipulating emission limits of COD < 90ppm and SS < 25ppm. The total treated wastewater is piped into the Industrial Park Joint Wastewater Treatment Plant. The initial rainfall (about 30 minutes) is collected in a storage tank, and then passed into the wastewater treatment plant for further processing. The waste water discharge meet the limits in 2022.

### Effluent Quality Test

Unit: mg/L			
Item	Standards	H1 Detected value	H2 Detected value
pH	limit value: 6-9	8.1	8.2
CHCl3	limit value: 0.6	0.00339	0.00107
COD	limit value: 90	33.4	44.3
NH3	limit value: 60	0.65	0.12
NO3-N	limit value: 50	17.2	24.1
Particulate Matter	limit value: 25	7.4	6.1

### Wastewater Discharge

Unit: (m <sup>3</sup> /year)			
	2020	2021	2022
The total amount of wastewater discharged (m <sup>3</sup> / year)	515,969	469,561	483,418

- **Discharge destination** : Piped into the joint wastewater treatment plant and to the sea area in Kaohsiung
- **Water quality and discharge** : In line with the Effluents Standard / activated sludge treatment for low and high COD concentration
- **Standards, methods, and assumptions** : Joint wastewater treatment plant limit

Note:

1. The total amount of wastewater discharge in 2022 was 483,418 MT, a slight increase of 2.95% compared with 2021.
2. The amount and quality of water discharged from 2020 to 2022 meet the discharge limits, and there are no incidents that exceed the standard.





# Environmental Prevention Mechanism



OUCC actively takes various measures to reduce pollution emissions from its factories and facilities, and through rigorous management mechanisms, minimize the actual or potential negative impacts on the local community. We adopt innovative technology to establish a production PI system to monitor the status of the plant operation sites. This real-time monitoring system for environmental data of the plant allows employees to monitor the operation of both production and environmentally protective equipment simultaneously, ensuring equipment availability and compliance with the relevant environmental regulations.

PI allows faster detection of cumene vapors being leaked from a nearby factory. Personnel can now control the air quality without delay and activate counter responses. Incoming air is cut off by the control room while inner air is recirculated through an activated carbon filter. Workers wear gas masks when working outdoors to prevent the inhalation of cumene vapor. Request for corrective action will be delivered to the nearby factory thru phone call at that instant.

## Air Pollution Control and Prevention

The Linyuan plant has acquired 7 Fixed Pollutant Operator Permits from the Environmental Protection Bureau of Kaohsiung City Government in accordance with Article 24 of the Air Pollution Prevention Act. Pursuant to the content of the permits, pollutants are tested and reported regularly. The main air pollutant emissions are: Volatile Organic Compounds (VOCs), Ethylene Oxide (EO), and ammonia.

## Air Pollution Prevention Equipment

Type	Number	Pollutants	Pollutant Removal Efficiency
Regenerative Thermal Oxidizer, RTO	2	VOCs	>95%
Direct Fired Thermal Oxidizer, DFTO	1		
Catalytic oxidizer	1		
Scrubber	7		>90%

## Air Pollution Control and Prevention

Pollutant Emission	2020	2021	2022
NOx	5,739.8 kg	6,692.00 kg	4,442 kg
SOx	1,857.35 kg	-	1 kg
VOC	40,765 kg	41,880 kg	29,777 kg
HAP	0 kg	0 kg	0 kg
PM	478.82 kg	595.00 kg	358 kg

Note:  
1. According to the regulations of the Kaohsiung City Government Environmental Protection Bureau "Pollutant Emission Quantity Authorization Documentation for Existing Stationary Pollution Sources," emission limits are as follows:  
NOx: 27,975 kg / year; SOx: 34,837 kg / year; VOC: 56,105 kg/year; PM: 5,051 kg / year.  
2. The calculation of air pollutant emission is based on the declaration and review of the "Integrated Management System for the Declaration of Air Pollution Charges and Emission Quantity from Stationary Pollution Sources."  
3. The calculation coefficient is done by inspection tests, where the actual pipeline emission data is collected by OUCC and sent to an inspection company authorized by the Environment Protection Administration.  
4. Zero POP emissions.

## Waste Management

All the waste generated by the OUCC plant is entrusted to qualified waste disposal contractors for removal. No breach of contract by waste disposal contractors in 2022. In addition, recyclable items are entrusted to community charity organizations for recycling after preliminary classification in the plant.

Our Waste Disposal Platform helps accelerate in-plant waste disposal and increase reuse. The goal is to reduce the waste by 5%. We will continue to strengthen the waste control and implement effective management. The Platform helps reduce the waste for the landfill, prevent the employees from wrongfully disposing unfamiliar waste that may jeopardize the safety of the plant.

## OUCC Waste Management Policies

Identifying waste related impacts	<ol style="list-style-type: none"><li>1. OUCC production process: raw material input → reaction/production → waste generated</li><li>2. Failure to remove the sludge generated may cause the shutdown of waste water plant and further affect the production processes of the plants</li><li>3. The process of drying sludge reduces volume of the waste to be transported, allowing more flexibility for waste disposal. Sludge can be recycled through the process of composting</li></ol>
Impact prevention mechanisms	<ol style="list-style-type: none"><li>1. Following the SOP for in-plant waste management</li><li>2. Establishing Waste Disposal Platform to speed up in-plant waste disposal and increase reuse; achieving effective management by tracking the type and amount of waste to be disposed</li><li>3. Outsourcing the qualified operators for disposal of waste generated in the manufacturing processes</li><li>4. Recycling measures to increase the reuse of metal barrels/plastic barrels/waste timber, sludge, etc.</li></ol>
Managing the waste disposal suppliers	<ol style="list-style-type: none"><li>1. Outsourcing the qualified operators for disposal of waste generated in the manufacturing processes</li><li>2. Establishing and initiating the review of new qualified waste disposal operators</li><li>3. Annual review of waste management operators</li><li>4. Reviewing the violation records of the waste disposal operators</li><li>5. Irregular inspection</li></ol>
Measurement and monitoring data	<ol style="list-style-type: none"><li>1. Output record of waste reporting</li><li>2. Autonomous waste inspection log</li></ol>





## The Results of Waste Management

Types of waste	Amount generated	Transfer disposal/reuse	Direct disposal
Hazardous waste (MT)	0.03	0.03	0
Non-hazardous waste (MT)	639.6	406.73	232.87

Note:

1. Disposal refers to any non-recycling operation, even though the operation contains the secondary outcomes of energy recycling.
2. Disposal refers to the management of discarded products, materials and resources in the sinks or through the chemical reaction or thermal conversion at the end of life cycle, so that those products, materials and resources can not be further used.

## Amount of the Waste Transferred from the Disposal by Recycling Operations

Disposal method (unit: tons)	On-site	Off-site	Total amount
Hazardous waste			
Reuse	0	0	0
Non-hazardous waste			
Preparation for reuse	0	0	0
Reuse	0	0	0
Other recycling operations	406.73	0	406.73
total	406.73	0	406.73

Note:

Recycling and reuse: The products, components or materials to be treated as waste are processed and turned into new products, components or materials of the same use.

(1) Recycling: The products or components to be treated as waste are processed to create new materials.

(2) Reuse preparation: The process that consists of checking, cleaning or repair, thru which the products or components to be treated as waste can be used again to serve the same purpose.

## Amount of the Waste Directly Disposed Using Disposal Methods

Disposal method (unit: MT)	On-site	Off-site	Total amount
Incineration (including energy recycling)	0	228.33	228.33
Incineration (excluding energy recycling)	0	0	0
Landfill	0	4.54	4.54
Other disposal operations	0	407.73	407.73
Total	0	640.6	640.6







Note: The non-hazardous waste is disposed using disposal operations

## Total Amount of Hazardous Wastes Generated during the Manufacturing Processes Required to be Disclosed under The Law or to be Disclosed Voluntarily

unit: MT					
Type	Item	Method	2020	2021	2022
Hazardous waste	pH ≤ 2.0 Waste acid	Chemical treatment	0.03	0.03	0.03
	Total weight	-	0.03	0.03	0.03
Non-hazardous waste	Waste iron barrels, waste iron (plastic) barrels, waste lubricating oil, waste oil mixture, waste wood, waste insulation materials, waste refractory materials, waste glass, and waste soil and rock.	Reuse	156.88	190.36	317.15
	Organic sludge	Thermal treatment	194.73	367.55	71.8
	The waste plastic mixture, wood mixture, household garbage, and organic sludge.	Incineration	143.93	117.33	129.83
	Non-hazardous slag, waste-activated carbon.	Landfill	95.99	0	4.54
	Others		79.02	33.12	117.28
Total weight		-	670.55	708.36	640.6

Note:

1. Reuse includes energy recycling.
2. Incineration (massive combustion): waste plastic mixture, waste wood mixture, household garbage, organic sludge, etc.
3. Other categories include waste ion exchange resin, sandblasting waste, non-hazardous oil sludge, waste paint, paint residue, other single non-hazardous waste metal or metal waste mixture, waste wire and cable, non-hazardous organic waste liquid, or waste solvent.
4. Waste ion exchange resin in 2022: 5.33 MT; D-1504 non-hazardous organic waste liquid: 81.73 MT.
5. In 2022, 14.49 MT of soil and rock waste were reused.
6. In 2022, 388.95 MT of thermal treatment/reuse/recycling products and 251.65 MT of waste disposed via incineration/landfill/physical treatment.
7. In 2022, waste plastic mixtures were made into plastic barrels for recycling and reuse.
8. In 2022, there were no output of waste refractory materials, general waste chemical substances, or hazardous waste catalysts.

  			
Year	Metal	Paper	Pallet
2021	55,950 kg	18,040 kg	2,040 pc
2022	124,270 kg	21,404 kg	440 pc
  			
Year	Tire	Air Conditioner	PET Bottle
2021	144 pc	3 pc	-
2022	117 pc	0 pc	1,399 kg

Note:

1. Changed resource recycling calculation method and categories in 2022.
2. Waste paper recycling includes documents and paper.
3. PET bottle waste includes plastics in 2022.
4. There were additional 18,780 kg of waste cables and 81 pcs of waste batteries in 2022.







Environmental Issues Appeal Mechanism

The OUCC has stipulated internal & external communication procedures for environment, labor safety & health, and quality management. Any of the environmental opinions or complaints the external stakeholders wish to convey can be sent to the Safety & Health Department, and according to the contents, a specialist from the Central Safety Committee will be appointed to communicate with the external stakeholders, and to investigate or review the issue within the shortest possible time according to its magnitude.

We have a "Stakeholder Contact" and an "Environmental Business Contact (07-6413101#1301)." If an environmental issue arises, OUCC can handle and respond to it immediately. With effective management, there have been no environmental complaints for 10 consecutive years.

2022 Environmental Regulation Management Improvement Mechanism

Description of Violation Incidents	Improvement Mechanism	Prevention Mechanism
1. The Environmental Protection Bureau conducted on-site inspection of EOG production process and discovered the VOC components emitted exceeding its standard for stationary pollution sources. (Received a fine of NT\$675,000)	1. Improvement measures: The leakage point of the pipeline's choke valve gland with VOC components was improved. Follow-up improvement items: With no on-site usage, the MOC procedure for the pipeline removal was carried out to reduce the VOC component leakage.	1. Prevention mechanism: Replace the old choke valve with the BELLOW-type choke valve to reduce the leakage of the gland.
2. The failure of Plant EOD-1 instrument flow meter of control facilities violated the air pollutant permit management. (Received a fine of NT\$100,000)	2. Improvement measures: Renew the flow meter of a new model, with the upper and lower limit alarms.	2. Prevention mechanism: Add specific RFID inspection points for pollution prevention facilities meters and record the on-site meter readings every shift.
3. The disposed waste oil sludge in September was not declared, which violated the Waste Disposal Act. (Received a fine of NT\$12,000)	3. Improvement measures: Implement the daily waste output and report regularly.	3. Prevention mechanism: Has the "cross-month" declaration guidance of irregular continuous operations written in the existing SOP of G0300-PC-006 industrial waste classification and storage management, and enhance with education and training to prevent recurrence.
Amount NT\$787,000		

Note:

1. There were no significant environmental incidents involving chemical leaks or environmental pollution in 2022.

2. A significant incident is defined as an event that results in penalties fined consecutively per day, shut-down, business suspension, mandatory close down, license invalidation, or referral for criminal punishment by environmental protection authorities at various levels.

Operational Environmental Tests

We have actively promoted pollution prevention and control systems and improvement plans, such as establishing groundwater monitoring wells, combustible gas monitoring stations, actively recycling carbon dioxide for reuse, establishing waste gas incinerators, and covering various wastewater plants to reduce the environmental impacts from production.

- Improve workplace ventilation and chemical substance volatilization, add ventilation equipment, use protective safety gear, implement safety & health education and training for operators.
- An internal/external circulation function switches have been installed in the air-conditioning system of each control room to cope with the odor emitted from other plant nearby, intruding through the air-conditioning system and causing discomfort to the staff. With the CO<sub>2</sub> concentration detectors added, the air quality is monitored. Also, an activated carbon air cleaner has also been added to the gas control room.

Environment Operational Test Results

Item	Content	Frequency	Inspection results
Personal hearing tests	Measurement of accumulated personal noise exposure	Biannually	
Reproductive toxic chemical detection	Detection of the concentration of ethylene oxide	Biannually	
Chemical detection	Detection and measurement of the concentration of chemicals such as methanol, ethylene glycol butyl ether, n-butanol and sulfuric acid in the working environment	Biannually	
Central AC indoor CO2 concentration detection	Indoor CO2 concentration detection	Biannually	
Inspection of equipment components	Volatile organic compounds	Quarterly	
Inspection of pipelines	Carry out detection of volatile organic compounds, sulfur and nitrogen oxides, granular particles, vapor and fumes in exhaust pipelines	Biannually / Annually	
Detection of waste	pH value, lead, zinc, cadmium, nickel, copper, chromium, arsenic, mercury and hexavalent chromium from the Toxicity Characteristic Leaching Procedure (TCLP) of industrial waste.	Annually	
Detection of wastewater	Water quality detection of original water and effluent.	Biannually	



## Social Inclusion



OUCC applies its corporate spirit of "taking from society, giving back to society." Through communication and cooperation, we sponsor in various manners the charitable organizations or charitable foundations, to which our affiliated companies belong, and participate in social activities. In addition, we also maintain partnership with suppliers and actively invite suppliers and employees to participate in social welfare activities. The total amount donated to disadvantaged minority and charity groups in 2022 exceeded NT\$ 3.92 million.

- OUCC has conducted unscheduled blood donation drives and cooperated with the FE Group to make relevant donations
- Employees have voluntarily donated to disadvantaged groups, volunteered, and donated materials to children's homes
- Actively participate in Good Neighborhood Fund donations, offer health care, emergency assistance, facility repairs, public welfare, and government decree promotion to the residents in Linyuan. Provide elementary schools with wholesome lunches, magazine subscriptions, and improve city highlights thru greening and purification of the community. Sponsor activities for traditional New Year festival, agricultural, fishery & special products marketing, arts & culture, environmental protection, economic construction, as well as sports.

### Participation in the Far Eastern Group Anniversary Charity Events

OUCC is in line with Far Eastern Group's anniversary public welfare activities every year. The Group business spans many industries, including food, clothing, housing, transportation, education, entertainment and charity. OUCC actively participates in the Group's public welfare activities "Happy 70" series to convey the concept of "Together for a Promising Future" and "Hand in Hand, to Create a Better Future Together," expressing our deep social commitment and gratitude to the land, and the local community of Taiwan.

### Community Environment Greening and Landscaping

OUCC has applied to the Industrial Development Bureau of the Ministry of Economic Affairs to adopt the environmental maintenance of a road landscape to achieve the effect of air purification through greening of the industrial area's road landscape. In 2022, OUCC adopted 116 street trees, 2,028 square meters of green space, 350 square meters of hedgerows, and 4,020 square meters of roads. The work sponsored includes cleaning, watering, environmental sanitation maintenance, pest control, road repair and post-disaster cleanup, and replanting depending on the planting density.



### Donation

NT\$ ten thousand

Type	2020	2021	2022
Charity	166	4	5
Local Participation	159	376	383
Goods Donation	0	0	4
Total	325	380	392

### Cash Donation Activity

NT\$

Unit	Events	Amount
Linyuan District Office Coordination	Sponsoring neighborly community funds (uses including festivals, environment, healthcare, policy advocacy events, folk activities, sales promotion for agricultural and fishery products, care for the underprivileged, stipend and scholarships, emergency relief, tours, maintenance of public facilities, etc.)	3,826,546
Firefighters, journalists, etc.	Fellowship, commemorative activities, etc.	7,000
Police Union Association of Linyuan Precinct and Linyuan Police Station	Sponsor police-related activities	48,000





# Chapter. 05

## Prudent Thinking

**OUCC** is committed to providing a safe and healthy working environment while ensuring its workers' physical and mental health. We follow and introduce pertinent international environmental safety and health standards, continuously improve workplace safety, and implement training and education to ensure employees understand and master necessary security knowledge and skills. The goal is to strive for "zero accidents, zero injuries, and zero pollution."

With the adherence to the industrial development and continuous improvement, OUCC joined the Taiwan Chemical Industry Responsible Care Association (TRCA) and is committed to pursuing a balance between industrial safety, health and environmental protection in accordance with the association's mission of "comprehensive recognition of the chemical industry's responsibility to Taiwan society and continuously improving environmental, health and safety performance."



**2022**  
Sustainable  
Performance

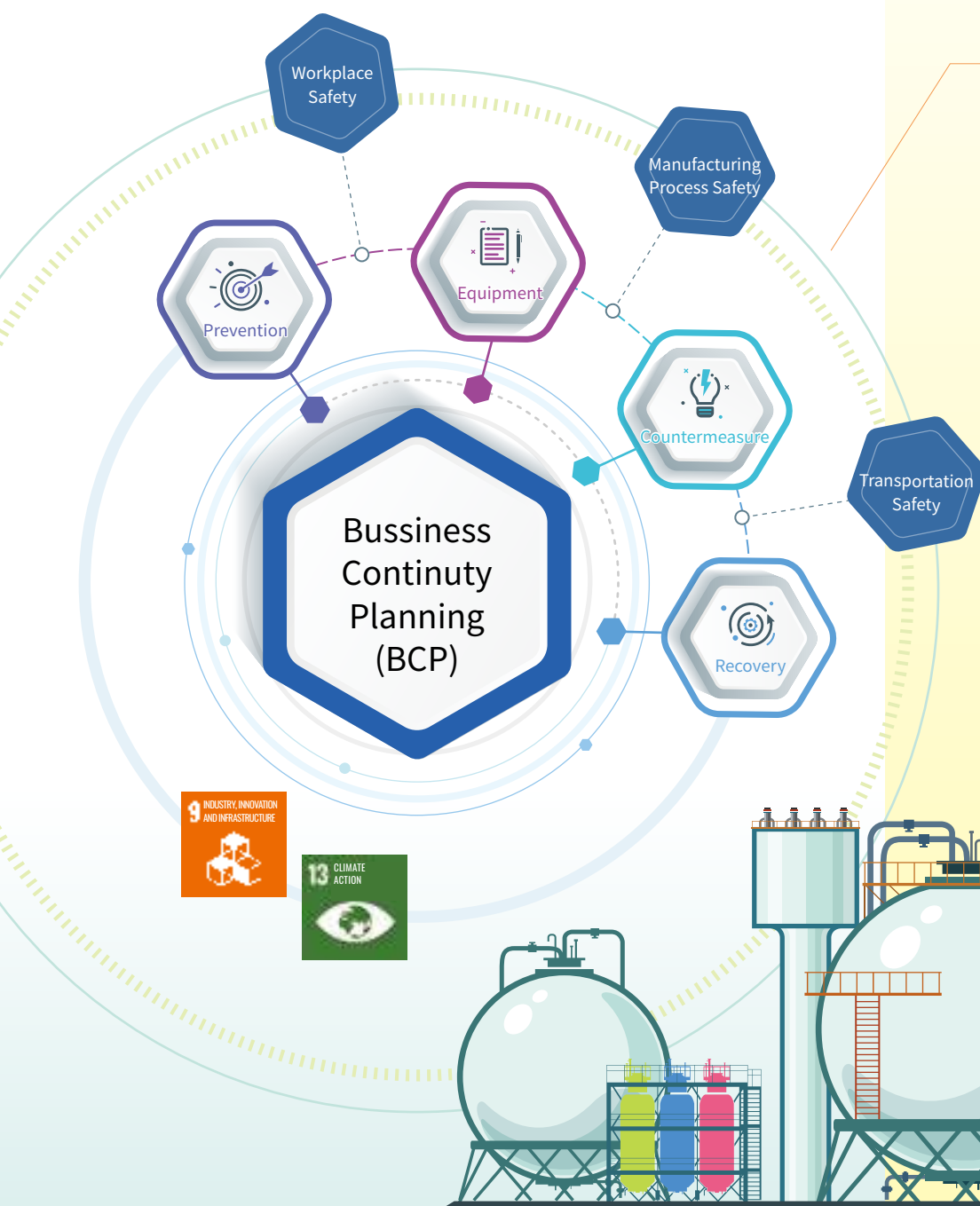
- Accumulated record of **1,015,663** disaster-free man-hours
- The workplace operating environment monitored items such as CO<sub>2</sub> concentration in the central air-conditioned space indoors, specific chemicals, organic solvents, etc. are **all in compliance with the standards**.
- Labor representatives accounted for **50%** composition of the Occupational Health and Safety Committee.



## Business Continuity Management

OUC has been working on the chemical safety management system for a long time, applying the concept of potential risk assessment as "only safer, no safest" in production and manufacturing processes, and evaluating possible disasters through pre-conception and simulation. This attitude contributes to the establishment of a comprehensive company approach to "Prevention Measures," "Chemical Transportation Safety," "Manufacturing Process (Plant) Safety" and the "Emergent Contingency Plan." We conduct simulation to predict the occurrence of possible disaster situations, and apply appropriate corrections to address deficiencies or shortcomings, continuing to improve safety management at our plant premises.

A record of five million workplace safety man-hours was achieved in February **2021**, and reset later in April. A re-cumulated **1,015,663** workplace safety man-hours were recorded as of December **2022**.



## Safe and Healthy Workplace



The OUC has joined the Taiwan Responsible Care Association (TRCA) to promote responsible care, and taken up six standard management guidelines to ensure plant safety, including process safety, emergency response safety, distribution safety, contractor safety, waste and reduction management, and product safety management.

- The senior supervisors of the factory have formulated a 5S safety team to carry out regular weekly patrol inspections according to the areas, keep track of any equipment gaps or environmental hazards, and offer suggestions for improving the inspected unit so that anomalies can be identified instantly.
- Promote and implement "TPM total production management/maintenance inspection" to strengthen the safety cultivation.
- The GRI 403 described in this chapter only applies to the Linyuan plant and does not include the Taipei headquarters.



## Record of Awards

### 2020

- Received the "Self-Response to Global Energy Conservation Activities" certificate of appreciation from the Environmental Protection Bureau
- Assisted in the "Dafa Industrial Park factory pollution prevention exchange workshop," and received a certificate of appreciation from Dafa Industrial Park Service Center, Industrial Development Bureau of the Ministry of Economic Affairs
- Assisted the Ministry of Education and Fooyin University in the implementation of University Social Responsibility (USR) project - "Dafa Industrial Park factory pollution prevention exchange workshop," and received a certificate of appreciation
- Received an outstanding performance award from the Taiwan Responsible Care Association (TRCA) in the participation of emergency response practice drills
- Recognized by Industrial Development Bureau of the Ministry of Economic Affairs as the outstanding performance company for 2020 self-reduction in greenhouse gas emissions

### 2021

- Received a certificate of appreciation from the Health Department of Kaohsiung City Government for proactively advocating workplace cancer prevention
- Received an award plaque from Taiwan Responsible Care Association (TRCA) for holding a conjoined on-site drill for toxic substance (ethylene oxide) incident
- Received an award plaque from Taiwan Responsible Care Association (TRCA) for participating in the Responsible Care Conference
- Received award plaques for participating in National Toxic Substance Accident Mock-up exercise from Environmental Protection Administration of Executive Yuan and Kaohsiung City Mayor
- Received an award plaque from CPC Corporation, Taiwan for participating in Critical Infrastructure Protection Evaluation and Exercise
- Received award plaque from IDB, MOEA for outstanding performance in reducing greenhouse gas emissions.
- Received a certificate of appreciation for participating in the project of Strengthening Industrial Public Safety Management organized by the Industrial Safety and Health Association of the R.O.C.

### 2022

- Due to the severe COVID-19 status in 2022, the activity participation rate was reduced in compliance with the company's epidemic prevention policy.





## Strengthen Industrial and Public Safety Management

To improve the risk management of the factory site, the relevant chief officers along with Vice President of OUCC, Ying-Shi Chang, attended the Overall Inspection Review of the Performance Index Planning and Joint Inspection Improvement Tracking Meeting of Linyuan Industrial Zone organized by the Industrial Development Bureau, MOEA in 2022.

## Comprehensive Occupational Safety and Health Management

According to national laws and regulations, OUCC has established and obtained ISO 45001:2018 Occupational Safety and Health Management System certification. In addition to completing the hazard operation (HazOp) assessment before the plant construction, we have also formulated the "Procedures for the Management of Change (MOC)" for any changes involving process equipment, process chemicals, process technology, safety facilities, operating procedures, etc., to ensure the safety management of each operation after the change.

Scope of application of the OUCC Occupational Health and Safety Management System:

- Include approx. 466 employees (318 employees + 148 contractors) in the Kaohsiung Linyuan plant, with 100% coverage rate, and the location at No. 3, Gongye 3rd Rd, Linyuan District, Kaohsiung City.
- All the controllable and influential operation activities, products or services of the personnel at the OUCC Linyuan plant, including all contractors who enter the facility's perimeter.
- The number of people covered by the internal management system audit: 466 people, covering 100% of the employees.

Note: Contractor calculation method: The details of door access records for personnel entering the factory according to OUCC's "Contractor Access Control System": cumulative working hours per month / number of working days per month / 8 hours per person per day = the number of people per month. The sum of the number of people in 12 months / 12 = the average number of people per year

## Solid Occupational Safety and Health System

OUCC has established an Occupational Safety and Health Committee with the chief plant Director as the convener. A total of 14 representatives participated, including 7 labor representatives, accounting for 50% of the committee.

The committee holds the meeting quarterly. Its main responsibility is to review and coordinate the occupational safety and health issues submitted by employees. After the records are completed, the results shall be announced to all employees. The Occupational Safety and Health Committee reviews the issues related to occupational safety and health inside and outside the factory pursuant to the items required by laws and regulations.

## Dedicated Technical Team for Occupational Health, Safety and Environmental Protection



## Diversified Health Management Project

OUCC cares for employees' personal health and provides them with comprehensive health resources, a comprehensive assessment mechanism and a health management program, which can also be extended to their families, include health checkups, health consultations, health education, diversified health seminars, employee assistance programs, as well as programs for the prevention of human-induced hazards. These services help employees to manage their own health, to create a friendly and healthy work environment.

Plans	2022 Employee Health Promotion Results
Health Care Measures	<ol style="list-style-type: none"><li>1. The factory area is equipped with medical kits, which are regularly and irregularly cleaned and updated.</li><li>2. Set up the Automated External Defibrillator (AED)</li><li>3. Linyuan plant has a specialized physician and a full-time nurse stationed to provide medical care and consultation for employees.</li></ol>
Health Checkup	<ol style="list-style-type: none"><li>1. Annual physical examination and re-examination are provided and are of a higher standard than those stipulated by laws and regulations.</li><li>2. In addition to the annual physical examination, for manager level and up, a senior executive health checkup is conducted once every 2 years.</li><li>3. As the hospital restricted its health examination service due to the pandemic, and the health examination covering rate only reached 75%.</li><li>4. Explain the results of the examination items and provide health education information in the health examination report.</li><li>5. Establish a health check tracking management mechanism, and provide medical and treatment assistance for employees with abnormal results.</li><li>6. If an employee cannot adopt the original work due to personal health conditions, the unit supervisor should change the employee's working place or job contents according to the doctor's evaluation results.</li><li>7. For middle-aged and elderly employees (over 50 years old,) we provide special health check-up items that are superior to regulations.</li><li>8. Statutory required special health examination items include benzene/formaldehyde/potassium dichromate/carbon tetrachloride/ dimethylmethanamine. OUCC currently has no staff requiring level 4 health management.</li></ol>
Health Counseling & Assistance	<ol style="list-style-type: none"><li>1. Assist employees and their family members in medical consultation and registration services.</li><li>2. Provide individual health consultation services and advise employees to avoid high-risk jobs.</li><li>3. No employee was diagnosed with occupational disease, the Occupational Disease Rate (ODR) was 0%, and no employee identified with the high-risk category.</li><li>4. Follow up on abnormal and high-risk employees, provide individual counseling and education, and assist in medical treatment.</li></ol>
Health Education and Advocacy	<ol style="list-style-type: none"><li>1. Information on vaccinations collected from health agencies was provided to the employees.</li><li>2. Unscheduled health and education publicity is held, and the content of the publicity depends on the actual epidemic status.</li><li>3. Safety is advocated on a daily basis by E-mail to all employees and suppliers.</li><li>4. The 2022 safety promotion themes include industrial safety, environmental protection, sanitation, fire protection, and epidemic prevention.</li><li>5. An alert announcement would be made when the air quality measured by the Environmental Protection Agency indicates dangers to health, to remind employees to wear mask outdoors and lessen outdoor activities.</li></ol>
Physical and Mental Health Promotion Activities	<ol style="list-style-type: none"><li>1. The company website and bulletin boards are used to promote health and epidemic prevention information in response to COVID-19.</li><li>2. Invite the fire department to the plant for "AED" and CPR education and training.</li><li>3. Awarded the Workplace Promotion Mark</li><li>4. We shall invite the Linyuan Public Health Center and the plant physician for the non-periodical health promotion courses in 2023.</li></ol>
Employee Assistance Program (EAP)	<ol style="list-style-type: none"><li>1. Compile information of "Daily Safety Promotion" &amp; "Epidemic Prevention Promotion" information and send it to all employees for reference.</li><li>2. The plant nurse in the medical office is available for telephone consultation and provides diversified assistance to employees.</li><li>3. The evaluation is forwarded to the plant doctor for consultation or medical treatment support, and the family is called if necessary to discuss and coordinate jointly.</li><li>4. Every year, staff leisure events are organized for employees' participation in the outings to maintain their physical and mental health.</li><li>5. Organize clubs and related activities to promote communication among employees and their families and improve physical and mental health.</li></ol>
Human-induced Hazards Prevention Plan	<ol style="list-style-type: none"><li>1. Formulate the "Program for the Prevention of Human-induced Hazards" to track and execute improvement and prevention to employees.</li><li>2. Develop rules for the management of personal posture operations to prevent employee injuries caused by incorrect working postures.</li><li>3. Propose an improvement mechanism based on the hazard level, and review and track the improved performance during quarterly occupational safety meetings.</li></ol>
Occupational Disease Risk Control	<ol style="list-style-type: none"><li>1. Implement health management tracking for workers exposed to special health hazards.</li><li>2. Three employees needed Specialized Health Checkups, one was classified as Level 2 management case. According to the regulations, the case has been transferred to Level 1 tracking management after consultation with specialist physician.</li></ol>





### Prevention of Abnormal Occupational Disease

OUCC has been attentive to the issue of employee overwork. OUCC Linyuan plant has established, implemented and promoted "Prevention of Disease Caused by Abnormal Workload Procedures," and taken safety and health preventive measures related to overwork to ensure the physical and mental health of employees, to further reduce the employee's long-term work pressure and job fatigue cumulation due to shift rotation, night shift work and long working hours, which affect the physical capability and cause the risk of cardiovascular disease. In 2022, there was no occurrence of employee overwork.

### Maternity Health Care at the Workplace

A "Healthy Maternity Protection Committee" has been established by Human Resources Department, the SHE Department, plant nurse, and supervisor of the workplace maternity unit to study maternal health hazard control and work adaptability adjustment practices. Risk levels are classified and adjusted in accordance with health risk assessment to ensure the work nature is in line with a proper level of health care for female employees.

Organization	"Healthy Maternity Protection Committee"
Goal	Provides physical and mental health care during pregnancy, childbirth, or nursing period
Plan	"Maternal Employee Health Plan"
Measure	<ul style="list-style-type: none"><li>Conduct risk assessment and classification management of the health of maternal employees.</li><li>Assessment of the health and the work adaptability of employee within a year after pregnancy and childbirth.</li><li>A nursing room has been set up.</li><li>Risk control strategies and plans have been prepared.</li><li>Full-time physician and nurse are stationed on the premises to provide employees with interviews, health counseling and assessment.</li><li>Adaptive work allocation has been established.</li><li>Emergency response measures have been implemented.</li><li>Improvements have been made to the working environment.</li><li>Tracking and management is carried out regularly.</li></ul>



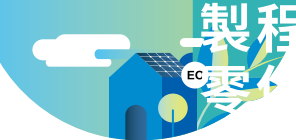
### Occupational Safety and Health Management System

OUCC follows the safety and health implementation project, establishes a people-oriented safety culture, and anticipates to implement comprehensive safety management and control.

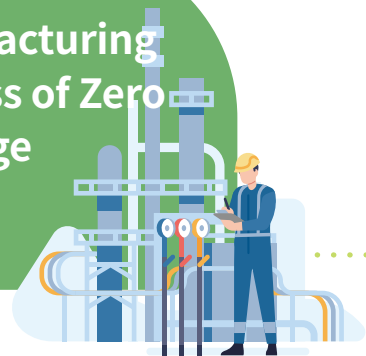
Regulatory identification	"Management Guidelines for Obtaining and Identifying Occupational Safety and Health Regulations"
Standardized management procedures	"Document and Data Control Management"
Safety and health education and training	"Education and Training" "Environmental Safety Certification Requirements for All Levels"
Hazard identification	"Occupational Safety and Health Hazard Identification and Risks and Opportunities Assessment Guidelines"
Change management	"Management Guidelines for Changes to Production Processes" "Management Guidelines for Organization and Personnel Change"
Chemical management	"Implementation of Labeling and Education Mechanism for Hazardous Chemicals" "Development and Management of Safety Data Sheets (SDS)"
Contractor management	"Communication and Evaluation of Environmental Safety and Health Management of Third-Party Suppliers" "External Suppliers Management Guidelines" "Policies for Work Safety and Health of Contractors"
Implementation check	"Safety Audit Branch Operational Guidelines" "Guidelines for 5S Patrol Inspections by Senior Managers" "TPM Total Production Management/Maintenance Inspection" "Safety Observations" "Internal Audit"
Emergency response	"Emergency Response Personnel and Duties" "Diversion and Response Plans for Typhoons and Heavy Rain" "Emergency Response Guidelines for Earthquakes" "Personnel Emergency Evacuation" "Guidelines for Crisis Management"
Occupational disaster prevention	"Guidelines for Incident Investigations" "Command Authority for Emergency Shut Down" "Maternal Employee Health Plan" "Prevention of Abnormal Workload Leading to the Onset of Illness" "Program for the Prevention of Human-induced Hazards" "Guidelines for Body Posture Management"







## Manufacturing Process of Zero Damage



OUCC has carried out manufacturing process hazard and operability (HazOp) analysis on hazardous processes associated with higher risks. A hazard prevention model and the risk management process have been constructed to reduce the probability of industrial accidents.

We have introduced the Layers of Protection Analysis (LOPA) technology into the newly established EOD plant in 2010 to effectively strengthen the safety protection layer and achieve the expected risk management effects.

- LOPA analyses of the existing processes were 100% completed.
- In 2022, 8 HazOp and ethylene oxide storage tanks (MS-208) LOPA analysis were implemented to improve safety. Each unit carried out general hazard identification using the risk ratings chart; a total of 10 improvement cases were tracked in 2022.

### Risk Hazard Analysis

Process risk holds the key to plant safety. In 2022, we conducted HazOp & LOPA risk identifications in the workplace for the ethylene oxide storage tank (MS-208.) We added an emergency shut-off valve to the gas discharging pipeline of the EO storage tank for an emergency shut-down. The emergency shut-off valve is SIL1 Level, which is aimed at improving security measures.

### Production Process Disaster Prevention Measures

Item	Process Isolation	Safety Configuration
An emergency shut-off valve is added to the gas discharging pipeline of the EO storage tank for an emergency shut-down	The emergency shut-off valve is raised to SIL1 level.	<ul style="list-style-type: none"><li>· Flammable and toxic gas detectors are installed on site.</li><li>· On-site personnel are distributed with gas cartridge/filter mask and goggles.</li><li>· Equipment and pipeline are equipped with emergency sprinkler firefighting foam system, supplemented with fire hydrant and water cannon.</li><li>· Equipped with DCS the chain logic system for production process.</li><li>· Both on-site and the control room are equipped with the press buttons for emergency shut-down.</li><li>· Personnel are equipped with class-A protective outfit when implementing the relevant isolation operations upon leakage.</li><li>· Emergency response to ethylene oxide leakage.</li></ul>
New independent emergency shut-off valve	<ul style="list-style-type: none"><li>· As the emergency shut-off valve share no components with the pressure control, the pressure valve cannot be co-shared.</li><li>· Set the low pressure and low liquid level chain to close the bottom discharge emergency shut-off valve.</li><li>· The MS-208ABCD inlet control valve is changed to an emergency shut-off valve.</li></ul>	

### Safety Prevention Mechanism

#### 1 Occupational Safety and Health Management Standard Operation Procedures (SOP)

- The environmental health and safety policy as set down in the "Environmental and Occupational Health and Safety Management Handbook" has been revised in response to the resolve of top management, request of the FE Group, and anticipation of stakeholders in view of the environmental safety and thealth.
- "Occupational Health and Safety Risks and Opportunities Management Guidelines" effectively identify the risks and opportunities of the occupational health and safety management system. We continue to enhance performance through active improvements to the occupational safety and health management system.
- The "Safety Manual for Work in Confined Spaces" lists safety management for all work operations in confined spaces to ensure personnel safety.
- "Environmental Safety Certification Requirements for All Levels" have to be followed by the supervisors of all units and apply to all levels of staff in need of certification.
- "Safety Management of High-Pressure Water Column (Water Blade) Operations" requires that all the necessary tasks be taken in strict compliance with regulations to ensure and maintain the safety of personnel at all times.

#### 2 Safety Data Sheet and Hazard Labeling of Chemical Substances

All raw materials and products used in the plant have associated material Safety Data Sheets (SDS) which are kept on-site and in the offices of each unit. They are also accessible on the Internet platform for employees' checking at all times. This ensures that all the proper actions to be adopted to secure the safe handling of the material and the safety of personnel and the plant.

#### 3 Sobriety Testing Before Entry

The "Work Rules" stipulate a sobriety test for employees entering the plant: For employees and contractors, alcohol testing is conducted at the factory as appropriate to deter and ensure the effect of alcohol-free entry into the factory. Employees or contractors who fail the sobriety test are denied entry. An employee who violates the rules will be dealt with according to the Work Rules. Contractors in violation will be penalized under the Contractor Operation Safety Commitment.

#### 4 Safety and Health Education Training

Continue to promote "safety, health, and environmental protection education and training." In 2022, a total of 92 courses were held with 490 participants and a total of 1,519 training hours. To ensure that employees can apply what they have learned, they can instantly submit or raise their questions, if any, during the course, to conduct effective two-way communication.



### Noise Prevention Measure

1. Notices of applying ear protection are displayed at all the entrances to the plant with noise pollutant.
2. Personal hearing tests are carried out every six months.
3. Plant personnel must wear earplugs or earmuffs before entering noise polluted spaces.
4. Every employee is arranged for an annual precision hearing test. No employees experienced hearing disorders in 2022.
5. A full-time physician and a nurse are stationed in the plant to provide employees with health checkups and healthcare.




### Non-disaster Man-Hours

OUCC promotes the following mechanisms to enhance the safety awareness of all our workers and contractors, to achieve the goal of accident-free man-hours:

- 5S patrol inspections are implemented by supervisory personnel every week. The safety branch will conduct a safety audit every month with improvement tracking carried out.
- Combine occupational health and safety with personnel key performance indicator (KPI,) which links with employees' performance bonuses. And we encourage all personnel to report false alarm incidents.
- The Plant supervisors participate regular safety meetings to discuss, communicate, share experiences and coordinate with each other on safety and health issues.
- An OUCC Safety and Health Line Group has been formed and the plant's supervisors and contractors are requested to join the group in order to reflect, share and communicate ideas and opinions.





**OUCC's cumulative safety man-hours in 2022: 1.015 million hours** (mid - and long-term goal: 2 million safety man-hours)

**OUCC contractors' cumulative safety man-hours in 2022: 1.352 million hours** (mid - and long-term goal: 1.5 million safety man-hours)

Purpose	Improvement Items and Methods	Status
Prevent the rolling iron door of the material warehouse from pinching and injuring personnel during entry or exit	An motion sensor is added to make the roller shutter stop immediately when people enter and exit.	 Achieved
Prevent damage from inadequate contact point of electrical equipment or other heat sources that have not been addressed for a long time	Purchase ultrasonic detectors and conduct frequent inspections to limit the likelihood of fire losses in equipment, buildings and casualties.	
During pump emptying and filter cleaning operations, keep on-site personnel safe from solvent splashes and ammonia leaks	Wear chemical gloves to limit the risk of injury for on-site staff, and carry an ammonia cartridge/filter to reduce the risk of toxication from ammonia leakage.	
Prevent the hot work operation from fires and explosions	(1)The fire blanket protects 5 aspects, and a spark-receiving device is added. (2)Flammables need to be removed. (3)Sprinkle water on the surrounding environment. (4)Complete preparation and execution before each hot work begins.	
Reduce inspection risk during typhoons	Add protective doors on both sides of the supplementary system.	

### Improving workplace Safety by Listening to Employees

Through regular meetings of the Occupational Safety & Health Committee and the Contractors, we discuss and develop safety improvement mechanisms to effectively reduce occupational safety risks. To ensure the safety of employees in the plant, we review and improve the safety and health items proposed by employees through the "Plant Safety and Health Meeting" held routinely.

Scope		OUCC Employees			Contractors		
Item	Gender			Total			Total
IR	Type of work-related injury	-	-	-	-	-	-
	Total working hour	-	-	604,288	-	-	521,662
	Number of recordable work-related injuries (case)	0	0	0	0	0	0
	Recordable work-related injuries rate (%)	0	0	0	0	0	0
	Number of fatalities as a result of work-related injuries (person)	0	-	-	-	-	-
	Fatalities as a result of work-related injuries rate (%)	0	0	0	0	0	0
	Number of high-consequence work-related injuries (excluding fatalities) (person)	-	-	-	-	-	-
	High-consequence work-related injuries rate (excluding fatalities) (%)	0	0	0	0	0	0
ODR	Type of work-related illness	-	-	-	-	-	0
	Number of cases of recordable work-related illness	-	-	-	-	-	-
	Number of fatalities as a result of work-related illness (person)	-	-	-	-	-	-
	Fatalities as a result of work-related illness rate (ODR) (%)	0	0	0	0	0	0



Note:

1. Rate of fatalities as a result of work-related injury = (Number of fatalities as a result of work-related injury / total work hours) x 1,000,000.
2. Rate of high-consequence work-related injuries = (Number of high-consequence work-related injuries / total work hours) x 1,000,000.
3. Rate of recordable work-related injuries = (Number of recordable work-related injuries / total work hours) x 1,000,000.
4. Total work hours of contractor / employees: total work hours of contractor, individual or organization at the work site at OUCC, from door access recordings and statistical calculation.
5. Statistical data does not include commuting accidents.

### Better Communication with Workers to Improve Occupational Safety and Health

OUCC followed the "G0300-WI-007 Guideline for Consultation and Participation of Workers and Occupational Safety and Health Committee Management" to reach internal consensus, and to establish safety and health management obligations and regular bilateral communication channels for internal employees, external contractors and the relevant stakeholders.

### Improvement Case

Risk Hazard Identification	Risk Level Before Improvement	Safety Improvement Mechanism	Risk Level After Improvement
Prevent serial control devices in the SIS security system from being BYPASSED.		1. Established the BYPASS control list for EOD plant 2. A new regulation that the BYPASS shall not be implemented without the approval from managers of three levels is reiterated and exhibited on bulletin board as well as during intra-section safety advocacy.	





## Zero Accidents in Transportation







Most of the chemicals in Taiwan rely on road transportation, but the lack of road planning for chemical transportation within the small geographical environment narrowly populated, any accident may immediately endanger the lives and property of the people nearby and cause significant losses to enterprises.

Therefore, OUCC attaches great importance to the establishment of a transportation safety mechanism and fulfills its responsibility as a gatekeeper for transportation safety. There were no serious chemical leakages in 2022.

### Transportation Risk Assessment

OUCC outsources all of its product transportation to external tanker truck operators. The main risk of chemical transport is traffic accident. Crashed or overturned truck may lead to chemical spills, endangering the lives and properties of truck drivers, road users, rescuers, nearby residents, and the wreck of environment, which shall incur tremendous social costs.

The direct cause triggering the hazardous substance leakage can be divided into four factors: human error, vehicle failure, storage facility, road and environment.

Risk factor	Possible incidents
 Human error	<ol style="list-style-type: none"><li>1. The inlet valve is not closed properly after a tank has been filled.</li><li>2. The tanker driver fails to fully comply with traffic rules, for example: speeding, drunk driving, running red lights, keeping no safe driving distance, etc.</li><li>3. Other road users fail to follow traffic rules and collide with the chemical tanker, or cause the tanker driver to veer and lose control.</li></ol>
 Vehicle failure	<ol style="list-style-type: none"><li>1. Vehicle mechanical failure: brakes, steering tire blowouts or punctures.</li><li>2. Transport tank not correctly coupled with the vehicle or the coupling device has been damaged.</li></ol>
 Storage facilities	<ol style="list-style-type: none"><li>1. The tank has been used for too long and may be corroded or defective in other ways.</li><li>2. The chemical load is incompatible with the tank material.</li><li>3. The internal pressure is way beyond the tank tolerance.</li><li>4. Leaking valves or leaks from pipeline accessories or other parts.</li></ol>
 Road and environment	<ol style="list-style-type: none"><li>1. Poor geometric road design: too sharp curves, steep hills, obstructed view of the road, etc.</li><li>2. Unclear and insufficient traffic direction and warning signs.</li><li>3. Poor road conditions and obstructions due to weather.</li></ol>



### Zero Transportation Accident - Adopting Tighter Transport Control Practices

We develop strict management standards to ensure that freight suppliers jointly fulfill their security commitments since all the tanker transportation in OUCC is outsourced. Apart from compliance with the requirements of the laws and regulations, we also ask our freight suppliers to include the "Risk Factors" in the emergency response mechanism, and continue to improve the safety management system based on the past disaster reviews or potential risk analysis.

OUCC also makes use of case-collected information to improve the depth of crisis response in the supplier transportation personnel and to create a win-win situation for contractor and the company through the promotion of regular education and training for the drivers and freight suppliers.

Process	Control Mechanism
Operational Regulations	<ol style="list-style-type: none"><li>1. Contract specifications: Supplier conduct is regulated by comprehensive clauses in the transport contracts. Freight suppliers are requested to comply with the signed admission management document that is included in the contract annexure.</li><li>2. Tanker loading: The "hazardous products road transport prospectus" and "material safety data sheets" must be submitted to the local motor vehicle supervision office for the issue of a temporary permit that must be on board with the driver before loading and shipping. The driver must drive on the scheduled transportation routes at the stipulated times.</li><li>3. Vehicle hardware requirements: Use of retreaded tires is strictly prohibited for the entire tanker (including front, back or onboard trolley;) each tanker should have at least two functional dashcams (speed and image,) and remote video storage for at least 2 weeks. The vehicle is equipped with GPS so the tanker can be located from any remote computer using a browser.</li><li>4. Driver requirements: OUCC requires that all tanker drivers must have dangerous goods transport permit and driver's license, and the gas tanker driver is required to have two additional permits for "high-pressure gas operation" and "high-pressure container operation." The driver must also have an qualified annual physical checkup report, and any driver with heart disease or hypertension history is prohibited from driving chemical tankers.</li></ol>
Transportation Regulations	<ol style="list-style-type: none"><li>1. Control and management mechanism: Implementation of personnel control, vehicle and cargo permits, coupling with tanker weighing and entrance/exit access records, strictly controls the admission of drivers, vehicles and their cargo to lower the possibility of incorrect product filling.</li><li>2. Safety control: The transportation route of dangerous goods tankers complies with Article 84 of the Road Traffic Safety Regulations. In addition to the announcement to notify all transporters, the contract also includes the "Rules Governing Safety and Health for Hazardous Goods Delivery" and "Transportation Violation Penalty Standards" to which the transporters must comply.</li><li>3. Safety inspection: Each transport vehicle entering and leaving the factory must complete the declaration and inspection. The driver must be notified to perform the self-inspection procedures, and then the OUCC staff will perform the re-check. Same process will be repeated after completion of filling.</li><li>4. Transportation monitoring: Each transportation route has been identified by the supervisory office. Dangerous goods must apply for a temporary road pass. According to the GPS and driving records, the driver must follow the intended route and allow inspection for compliance.</li></ol>
Transportation Meeting	<ol style="list-style-type: none"><li>1. Regular meetings: OUCC holds regular transportation meetings to effectively manage safety and communicate the relevant safety issues with the transportation.</li><li>2. Meeting results: In 2022, we reviewed the dispatching vehicle problem, tracked and reviewed abnormal accidents, coordinated transportation operation modes, discussed controversial projects, publicized policies and safety, and responded to the manufacturers' problematic issues.</li><li>3. Goal: In 2022, the gas tanker was equipped with camera lens over the entire vehicle to strengthen the driver's control over the surrounding situation of the vehicle, which has been achieved.</li></ol>



Process	Control Mechanism
Emergency Response	<ol style="list-style-type: none"><li>Emergency response mechanism: Each transport company is required to provide an Emergency Response Prospectus.</li><li>Emergency drill: Every year, one type of transportation provider is selected to conduct emergency response drills, and the fire department or the fire prevention organization is invited to participate in the drills. At least two or more freight suppliers are involved in each exercise.</li><li>An emergency response drill for "liquid nitrogen" transportation was held in 2022, and the relevant safety recommendations were proposed after the drill.</li></ol>
Education and Training	Suppliers' transportation and dispatch personnel should receive refreshed training every year to improve their depth of crisis response.
Diversified Audit	<ol style="list-style-type: none"><li>Onsite audit: The transport company is subject to an annual onsite audit that is part of the supplier's audit. To ensure that the transport companies attach enough importance to the quality of transportation, the results of the onsite audit shall be referred as the basis for the distribution of freight charges or volume ratio for the following year.</li><li>Road audit: It is classified as occasional inspections or as GPS satellite positioning.<ul style="list-style-type: none"><li>Occasional inspections: Randomly track transport vehicle, record the driver's driving behavior, driving speed, and whether the unloading operation complies with the regulations.</li><li>GPS satellite positioning inspection: Such is used to determine the vehicle position and check reasonableness of the driving speed, idle time, as well as the appropriateness of selected route or zone.</li></ul></li></ol>

### Education and Training Results for the Gas Supplier Transportation Personnel

	H1 / 2022	H2 / 2022
Training Topic	Filling operations for tanker at the filling station.	Precautions for tanker filling and tailgate operations.
Number of Participants	22	29
Number of Gas Transportation Supplier Participants	3	3
Participation Rate (%)	100	100

Note: Participation Rate=total forwarders participated in the training / total forwarders in 2022

### Pandemic Prevention Policies for Transportation

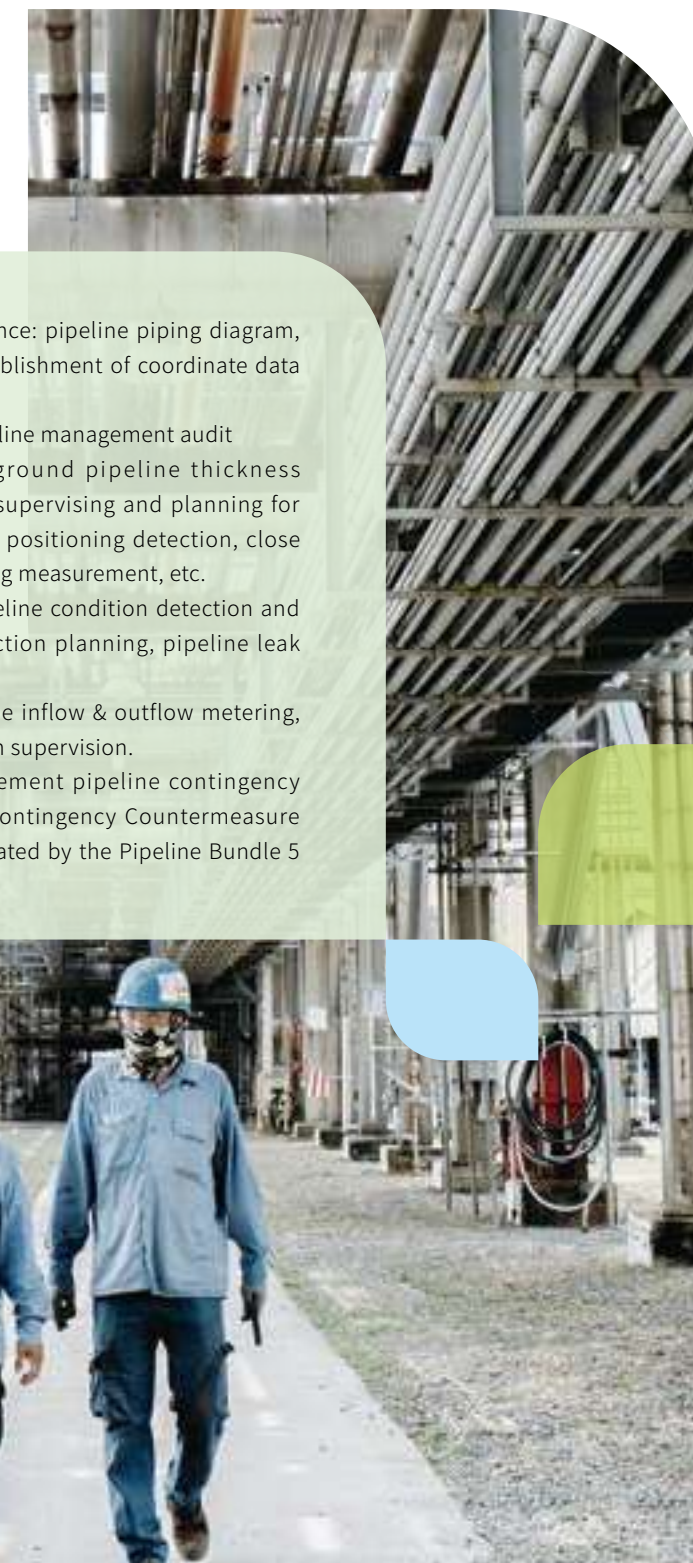
- Before entering the plant, all drivers must have their temperature taken at the guard's office. Anyone with a temperature above 37.5°C will be denied entrance.
- Contractors, subcontractors, drivers, etc., must wear masks at all times when they are at the plant premises.
- Contractors, subcontractors, and drivers are prohibited from entering indoor space such as control room, office, warehouse, etc.
- At the weigh station, drivers are required to sanitize their hands. Anyone who refuses to comply will be barred from continuing the operation.
- Anti-pandemic measures such as Health Declaration Statement, Temperature Taken, and Social Distancing APP must be implemented before entering the plant premises.
- The five rules of implementation include zero contact, visual confirmation of document, minimal conversation, keeping a safe distance and frequent sanitization.
- During a severe epidemic, guests or contractors are prohibited from entering the plant premises for non-emergency events.

### Field Pipeline Maintenance Operation and Management

OUCC formed the "Pipeline Maintenance Operation Team" to actively manage the pipeline-related business, including the establishment and management of pipeline diagrams, monitoring the current status of pipeline operations, conducting pipeline surveys, contingency drills, joint defense organization maintenance, and reviewing the management of pipelines out of OUCC to comprehensively control the inspection, testing, and maintenance status, so as to reduce the risks of the external pipelines.



### Underground Pipeline Maintenance Operation



- Pipeline diagram information system maintenance: pipeline piping diagram, basic data collection and maintenance, the establishment of coordinate data and system applications.
- Pipeline patrol inspection management and pipeline management audit
- Pipeline and facility maintenance: Underground pipeline thickness measurement, abnormal nodes maintenance, supervising and planning for the cathode anti-corrosion measurement, pipe positioning detection, close electricity potential detection and GPS positioning measurement, etc.
- Pipeline maintenance and risk assessment: Pipeline condition detection and risk assessment, Intelligent Passers (IP) inspection planning, pipeline leak detection and replacement planning, etc.
- Pipeline system operation and monitor: Pipeline inflow & outflow metering, pressure checking system planning and operation supervision.
- Pipeline contingency plan and the drill: Implement pipeline contingency management and the drill according to the "Contingency Countermeasure Guidelines" and "Contingency Drill Plan" formulated by the Pipeline Bundle 5 Area Joint Protection Organization.





## Emergency Response Mechanism



To strengthen emergency response for risks, the company sets up various scenario simulations through announcement, education & training, and practical exercises, to enhance employees' comprehension and familiarity with the contingency mechanism, which may ensure of a swift response at the accident scene of the plant premises, to minimize the damage of the accident and its effects on the environment and the personnel.

### Emergency Response Plan

The OUCC has set up various scenarios in its "Emergency Response Plan," covering the probable fire, leaks, typhoons, earthquakes, war, transportation accidents, notifications, evacuations, rehabilitation and so on. Regular drills and contingency measures are organized to cope with disasters that might occur, to minimize damage and loss, and to protect employees' safety.

### Emergency Response Training

According to the risk assessment results regarding the processes of production and transportation, the major factors of incurring accidents at OUCC are likely to involve chemical spills, fire, tanker accidents, and explosion.

In this regard, we organized an "Emergency Response Team" to conduct 24 hours of training in 2022, with a total of 249 participants. In addition, all employees of the Linyuan plant conducted 2 levels of emergency response training. The total number of participants was 150, and the Linyuan fire brigade was invited to provide onsite guidance to the actual fire protection facility operations.

In addition, an emergency response drill for a toxic chemical substance leak (specific chemical substance) was conducted by the R&D unit, with a total of 24 participants.

The goal is to equip the employees with ample knowledge and experience in order to reduce the impact and handle the accident properly.



### Climate Change: A Compound Disaster Response Plan

Disaster Risk Type	Emergency Response Plan
Leaks, fire	Emergency Response Personnel and Duties
Transport accidents	Transportation Incident Emergency Response Operations
Typhoon, heavy rain	Diversion and Response Plans for Typhoons and Heavy Rain
Earthquakes	Emergency Response Guidelines for Earthquakes

### 2022 Emergency Response Drill Example

Emergency Response Drill Types	Fire Caused by Flammable Gas Leaks
Simulation Scenarios	Fire Caused by Gas Leakage from the Lower End Cover Flange of EOG Process Reactor
Key aspects of exercises	<ol style="list-style-type: none"><li>1. Simulate the response capabilities during holiday with less manpower.</li><li>2. Inspect the job familiarity status of the commander, notification unit, firefighting unit, safety protection unit, evacuation guidance unit, and paramedics unit.</li><li>3. Familiarize the plant units with the position of emergency shut-off valve of feeding equipment and the operation response capacity.</li><li>4. Review the deficiencies during the response drill for further improvement.</li></ol>















# Appendix

## Governance Member Information

● Yes

● No

Name	Gender	Committee	Job Position	Management / Non-Management	Independence	Tenure	Representative Community	Enterprise Impact / Influence Ability	Stakeholder Representative
Douglas Hsu		Board of Directors	Chairman of Far Eastern New Century Corporation, Asia Cement Corporation, U-Ming Marine Transport Corporation, Far Eastern Department Stores Ltd., Far EastOne Telecom. Co., Ltd., and Vice Chairman of Far Eastern International Bank.	●	Non-independent Directors	3 years	●	Possess industrial experience and operational judgment in the petrochemical sector, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making.	●
Johnny Shih		Board of Directors	Vice Chairman of Far Eastern New Century Corporation, Chairman of Everest Textiles Co., Ltd., Director of Asia Cement Corporation, and CTCL.	●	Non-independent Directors	3 years	●	Possess industrial experience and operational judgment in the petrochemical sector, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making.	●
Humphrey Cheng		Board of Directors	President of Far Eastern New Century's Administrative Headquarters, Director of Far Eastern International Bank, and Chairman of Tong Fu Investment Corporation.	●	Non-independent Directors	3 years	●	Possess industrial experience, professional qualifications and operational judgment in law section, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making.	●
Kao-Shan Wu		Board of Directors	President of Far Eastern New Century's Petrochemical Headquarters and Director of Everest Textiles Co., Ltd., and Oriental Petrochemical Corporation.	●	Non-independent Directors	3 years	●	Possess industrial experience and operational judgment in the petrochemical sector, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making, chemical engineering and chemistry.	●
Justin Tsai		Board of Directors	Director and President of Tong Fu Investment Corporation, Director of Far Eastern United Petrochemical (Yangzhou) Ltd., Oriental Petrochemical Corporation, and Feng Tay Enterprises Co., Ltd.	●	Non-independent Directors	3 years	●	Possess industrial experience and operational judgment in the petrochemical sector, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making, chemical engineering and chemistry.	●
Eric Chueh		Board of Directors	President of Oriental Petrochemical Corporation, COO of Far Eastern New Century's Petrochemical Headquarters	●	Non-independent Directors	3 years	●	Possess industrial experience and operational judgment in the petrochemical sector, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making, chemical engineering and chemistry.	●
James Chou		Board of Directors	Chairman of Far Eastern Industries (Shanghai) Ltd., Director of Far Eastern Union Petrochemical (Yangzhou) Ltd., Far Eastern Yihwa Petrochemical (Yangzou) Ltd., and Oriental Petrochemical Corporation.	●	Non-independent Directors	3 years	●	Possess industrial experience and operational judgment in the petrochemical sector, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making, chemical engineering and chemistry.	●
Bing Shen		Board of Directors	Independent Director of Elite Material Co., Ltd.	●	Non-independent Directors	3 years	●	Possess experience and operational judgment in the professional finance sector, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making.	●
Walt Cheng		Board of Directors / Audit Committee / Remuneration Committee	President of Axolar Technology Corp. Supervisor of Sunny Pharmtech Inc.	●	Independent Directors	3 years	●	Possess industrial experience and operational judgment in the petrochemical sector, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making, chemical engineering and chemistry.	●
Cheng-Tien Chan		Board of Directors / Audit Committee / Remuneration Committee	Chairman of Yi Jinn Industrial, Yi Tong Fiber, Kwang Ming Silk Mill, and Hung Chou Fiber Industrial	●	Independent Directors	3 years	●	Possess industrial experience and operational judgment in the petrochemical sector, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making.	●
Ping Lih		Board of Directors / Audit Committee	Director of T. N. Soong Foundation	●	Independent Directors	3 years	●	Possess professional accountant qualifications and operational judgment, business management, financial accounting, business economics, crisis management, worldwide market view, leadership decision-making.	●
Jing-Wu Huang		Remuneration Committee	-	●	Non-independent Directors	3 years	●		●





GRI 403: Occupational Health and Safety

Item	Reporting requirements	Reporting Content
403-1 Occupational health and safety management system	A. A statement of whether an occupational health and safety management system has been implemented, including whether: <ul style="list-style-type: none"><li>i. the system has been implemented due to legal requirements;</li><li>ii. the system has been implemented based on recognized risk management and/or management system standards/guidelines.</li></ul>	OUCG's Kaohsiung Linyuan plant obtained the "ISO 45001 Occupational Safety and Health Management" certification in 2020, which has been re-verified by the certification company every year, and the certificate continues to be valid.
	B. A description of the scope of workers, activities, and workplaces covered by the occupational health and safety management system.	Scope of application for the occupational safety and health management system: <ul style="list-style-type: none"><li>1. Include approx. 300 employees in the Kaohsiung Linyuan plant. The location is at No. 3 Gongye 3rd Rd, Linyuan District, Kaohsiung City.</li><li>2. Each unit of the factory can control and dictate the staff's operational activities, products, or services.</li></ul>
403-2 Hazard identification, risk assessment, and incident investigation	A. A description of the processes used to identify work-related hazards and assess risks on a routine and non-routine basis, and to apply the hierarchy of controls in order to eliminate hazards and minimize risks, including: <ul style="list-style-type: none"><li>i. how the organization ensures the quality of these processes, including the competency of persons who carry them out;</li><li>ii. how the results of these processes are used to evaluate and continually improve the occupational health and safety management system.</li></ul>	Established: G0300-PC-013 Occupation Safety and Health Hazard Identification & Risk and Opportunity Assessment G0300-PC-037 Occupational Safety & Health Risk and Opportunity Management Procedures Accident Investigation: OUCG has established the following: G0300-PC-020 Accident Investigation Procedures G0300-WI-096 Proposal Incentives for False Alarm Incidents
	B. d. A description of the processes used to investigate work-related incidents, including the processes to identify hazards and assess risks relating to the incidents, to determine corrective actions using the hierarchy of controls, and to determine improvements needed in the occupational health and safety management system.	Established incident investigation and handling procedures to confirm the cause of the incident, propose property loss, execute disaster analysis and incident recurrence prevention countermeasures, and track and confirm the implementation of improvement suggestions. Established "G0300-PC-020 Accident Investigation Procedure" and "G0300-WI-096 Proposal Incentives for False Alarm Incidents."
403-3 Occupational health services	A. A description of the occupational health services' functions that contribute to the identification and elimination of hazards and minimization of risks, and an explanation of how the organization ensures the quality of these services and facilitates workers' access to them.	Formulated G0300-PC-013 Occupation Safety and Health Hazard Identification and Risk & Opportunity Assessment, G0300-PC-037 Occupational Safety and Health Risk and Opportunity Management Procedure, G0300-WI-074 Employee Health Examination, G0300-WI-082 Workplace Health Management Measures, G0300-WI-088 Maternal Employee Health Plan. G0300-WI-089 Prevention of Abnormal Workload Leading to the Onset of Illness, G0300-WI-091 Program for the Prevention of Human-induced Hazards, and G0300-WI-094 Guidelines for Body Posture Management.
403-4 Worker participation, consultation, and communication on occupational health and safety	A. A description of the processes for worker participation and consultation in the development, implementation, and evaluation of the occupational health and safety management system, and for providing access to and communicating relevant information on occupational health and safety to workers.	The "Occupational Safety and Health Management Unit" is responsible for planning, supervising, and promoting labor safety and health-related operations. OUCG's "Occupational Safety and Health Committee" meets quarterly and is responsible for deliberation. Established "G0300-WI-007 Worker Consultation, Participation, and Occupational Safety and Health Committee Management Procedures."
403-5 Worker training on occupational health and safety	A. A description of any occupational health and safety training provided to workers, including generic training as well as training on specific work-related hazards, hazardous activities, or hazardous situations.	Implement the necessary safety and health education and training for general, specialized, new hire, and changed operations according to A0200-PC-001 Education and Training, A0200-PC-009-01 Application Form for Safety and Health Changes Regarding Organizational and Personnel Changes, and G0300-WI-073 Environmental Safety Certification Requirements for All Levels.

Item	Reporting requirements	Reporting Content
403-6 Promotion of worker health	A. An explanation of how the organization facilitates workers' access to non-occupational medical and healthcare services, and the scope of access provided.	G0300-WI-074 Employee Health Examination, G0300-WI-082 Workplace Health Management Measures, G0300-WI-088 Maternal Employee Health Plan, G0300-WI-089 Abnormal Workload-Induced Illness Prevention, G0300-WI-091 Human-Induced Hazards Prevention Program, and G0300-WI-094 Guidelines for Body Posture Management. There are physician and nurse stationed for and health consultations, and we also participate in the health workplace certification of external organizations.
403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	A. A description of the organization's approach to preventing or mitigating significant negative occupational health and safety impacts that are directly linked to its operations, products or services by its business relationships, and the related hazards and risks.	Identify and analyze all types of physical, chemical, biological, and human engineering risks that may be created by raw materials, machinery and equipment, the operating environment, and personnel operating activities engaged in the company's various operations or services continuously. Formulated "G0300-PC-013 Occupation Safety and Health Hazard Identification and Risk & Opportunity Assessment, G0300-PC-037 Occupational Safety and Health Risk and Opportunity Management Procedure."
403-8 Workers covered by an occupational health and safety management system	A. If the organization has implemented an occupational health and safety management system based on legal requirements and/or recognized standards/guidelines: <ul style="list-style-type: none"><li>i. the number and percentage of all employees and workers who are not employees but whose work and/or workplace is controlled by the organization, who are covered by such a system;</li><li>ii. the number and percentage of all employees and workers who are not employees but whose work and/or workplace is controlled by the organization, who are covered by such a system that has been internally audited;</li><li>iii. the number and percentage of all employees and workers who are not employees but whose work and/or workplace is controlled by the organization, who are covered by such a system that has been audited or certified by an external party.</li></ul>	Accepted audit: department supervisor + engineer: 75 people. Number of auditors: 38 people (internal auditors) Number of employees: 316 Ratio = 0.36
403-9 Work-related injuries	A. For all employees: <ul style="list-style-type: none"><li>i. The number and rate of fatalities as a result of work-related injury;</li><li>ii. The number and rate of high-consequence work-related injuries (excluding fatalities);</li><li>iii. The number and rate of recordable work-related injuries;</li><li>iv. The main types of work-related injury;</li><li>v. The number of hours worked.</li></ul>	Please refer to 2022 ESG Report P.113.
	B. For all workers who are not employees but whose work and/or workplace is controlled by the organization: <ul style="list-style-type: none"><li>i. The number and rate of fatalities as a result of work-related injury;</li><li>ii. The number and rate of high-consequence work-related injuries (excluding fatalities);</li><li>iii. The number and rate of recordable work-related injuries;</li><li>iv. The main types of work-related injury;</li><li>v. The number of hours worked.</li></ul>	Please refer to 2022 ESG Report P.113.



GRI 403: Occupational Health and Safety

Item	Reporting requirements	Reporting Content
403-9 Work-related injuries	C. The work-related hazards that pose a risk of high-consequence injury, including: i. how these hazards have been determined; ii. which of these hazards have caused or contributed to high-consequence injuries during the reporting period; iii. actions taken or underway to eliminate these hazards and minimize risks using the hierarchy of controls.	Formulated "G0300-PC-013 Occupation Safety and Health Hazard Identification and Risk & Opportunity Assessment, G0300-PC-037 Occupational Safety and Health Risk and Opportunity Management Guideline."
	D. Any actions taken or underway to eliminate other work-related hazards and minimize risks using the hierarchy of controls.	Formulated "G0300-PC-013 Occupation Safety and Health Hazard Identification and Risk & Opportunity Assessment, G0300-PC-037 Occupational Safety and Health Risk and Opportunity Management Guideline."
	E. Whether the rates have been calculated based on 200,000 or 1,000,000 hours worked.	1,000,000
	F. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.	Oriental Union Chemical Corp. Kaohsiung Linyuan Plant's statistics are compiled and reported monthly.
403-10 Work-related ill health	A. For all employees: i. The number of fatalities as a result of work-related ill health; ii. The number of cases of recordable work-related ill health; iii. The main types of work-related ill health.	Please refer to 2022 ESG Report P.113.
	B. For all workers who are not employees but whose work and/or workplace is controlled by the organization: i. The number of fatalities as a result of work-related ill health; ii. The number of cases of recordable work-related ill health; iii. The main types of work-related ill health.	Please refer to 2022 ESG Report P.113.
	C. The work-related hazards that pose a risk of ill health, including: i. how these hazards have been determined; ii. which of these hazards have caused or contributed to cases of ill health during the reporting period; iii. actions taken or underway to eliminate these hazards and minimize risks using the hierarchy of controls.	Formulated "G0300-PC-013 Occupation Safety and Health Hazard Identification and Risk & Opportunity Assessment, G0300-PC-037 Occupational Safety and Health Risk and Opportunity Management Guideline."

SASB Index - Chemicals

Through our incessant endeavors in the enhancement of sustainability disclosures, OUC's compliance and disclosure of the Sustainability Accounting Standards Board (SASB) this year has set a major milestone in our sustainability management. Unless otherwise stated, the statistical date for the data disclosed in this index is till December 31, 2022.

Table 1. Sustainability Disclosure Topics & Accounting Metrics

SASB Topic	SASB CODE	ACCOUNTING METRIC	PAGE
Greenhouse Gas Emissions	RT-CH-110a.1	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	127
	RT-CH-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	126-127
Air Quality	RT-CH-120a.1	Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs)	127
Energy Management	RT-CH-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, and (4) total self-generated energy	128
Water Management	RT-CH-140a.1	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with high or extremely high baseline water stress	128
	RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	128
	RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	128
Hazardous Waste Management	RT-CH-150a.1	Amount of hazardous waste generated, percentage recycled	129
Community Relations	RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests	129
Workforce Health & Safety	RT-CH-320a.1	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees	No occurrence
	RT-CH-320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	130
Product Design for Use-phase Efficiency	RT-CH-410a.1	Revenue from products designed for use-phase resource efficiency	130
Safety & Environment Stewardship of Chemicals	RT-CH-410b.1	(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment	130
	RT-CH-410b.2	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact	130





SASB Topic	SASB CODE	ACCOUNTING METRIC	PAGE
Genetically Modified Organisms	RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs)	No relevance
Management of the Legal & Regulatory Environment	RT-CH-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	131
Operational Safety, Emergency Preparedness & Response	RT-CH-540a.1	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)	No occurrence
	RT-CH-540a.2	Number of transport incidents	No occurrence

Table 2. Activity Metrics

SASB CODE	ACCOUNTING METRIC	PAGE
RT-CH-000.A	Production by reportable segment	131

## Sustainability Disclosure Topics &amp; Accounting Metrics

## Greenhouse Gas Emissions

## RT-CH-110a.1 Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations.

1. Scope 1 GHG emissions: 30,437.1649 t-CO<sub>2</sub>e
2. Percentage covered under emissions-limiting regulations : 100%

## RT-CH-110a.2 Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets.

Long- and short-term strategies/plans for scope 1 greenhouse gas emissions

## Short-term goals:

- Reduce 1% of carbon annually using 2015 as the base year.
- In 2022, the carbon reduction amount reached 1,910 t-CO<sub>2</sub>e, which reached 0.6%

## Medium-term goals (2023-2027):

- Annual reduction target: 2% per year, carbon reduction 6,420 t-CO<sub>2</sub>e/year
- 5-year goal: accumulative 10%, cumulative carbon reduction of 32,100 t-CO<sub>2</sub>e

## Long-term goals (2028-2032):

- 2030 carbon reduction target: 35%

## 1. Scope 1 greenhouse gas emissions reduction target setting

Item	Absolute Target
Absolute goal of GHG emission	27.79 %
Base year	2015 年
Absolute carbon emissions at base year	66,732.4267t-CO <sub>2</sub> e
Target setting year	2008 年
Percentage of emissions reduction compared to base year	20 %
Target achievement year	2030 年
Target achievement ratio (compared to base year)	42.28 %
Target achievement mechanism	All personnel participate in energy conservation and carbon reduction management activities, continue to design and carry out energy conservation and reduction projects, analyze and implement low-carbon technology, reduce energy consumption to reduce GHG emissions.

## 2. Activities or investments for the reduction plan and any risks or constraints that may affect the plan/objectives, including:

- Changes in energy structure: Evaluating and designing high-efficiency and low-carbon co-generation systems and setting goals in response to energy structure changes in 2025.
- Rising energy prices: Affects the benefit evaluation of the co-generation system, as energy is dependent on imports. There is a risk of supply shortages due to international situations.
- Lack of labor and materials: It may lead to completion schedule delays.

## 3. Scope of reduction strategy, plan, and/or reduction target : covers OUCC's Linyuan plant area.

## 4. Impact strategies, programs and/or reduction targets, related "Emissions Limitation Programs" and/or "Emissions Programs/Regulations," including:

- The 2050 net-zero emissions target is incorporated in accordance with the amendments of the Climate Change Response Act.
- The carbon fee will be collected in stages and implemented by 2024 the soonest.

## Air Quality

## RT-CH-120a.1

## Air emissions of the following pollutants:

1. NO<sub>x</sub> (excluding N<sub>2</sub>O)
2. SO<sub>x</sub>
3. volatile organic compounds (VOCs)
4. hazardous air pollutants (HAPs)

	2022
NO <sub>x</sub>	3.343 MT
SO <sub>x</sub>	0 MT
VOCs	24.039 MT
HAPs	NA
PM	0.26 MT

Energy  
Management

## RT-CH-130a.1

(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy

1. Total energy consumed: 2,834,659.82 GJ
2. Percentage grid electricity: 100 %
3. Percentage renewable: 0 %
4. Total self-generated energy: 0 GJ

Water  
Management

## RT-CH-140a.1

(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress

1. Total water withdrawn: 1,990.891 thousand m<sub>3</sub>
2. Total water consumed: 1,990.891 thousand m<sub>3</sub>
3. No water withdrawn/use from water-stressed areas.

## RT-CH-140a.2

Number of incidents of non-compliance associated with water quality permits, standards, and regulations.

1. In 2022, OUCC had no incident of non-compliance associated with water quality permit.

## RT-CH-140a.3

Description of water management risks and discussion of strategies and practices to mitigate those risks

Explanation of water resources management-related risks and coping strategies.

1. Water management risks associated with water intake, consumption, and discharge and/or wastewater: OUCC Linyuan Plant uses the water from the Fengshan Reservoir rather than the areas suffering from water shortage. The water is treated before use. As located in the industrial park, the plant's waste water is discharged into the industrial sewers, polluting no water source. To cope with the risk of a water shortage or floods caused by climate change, we have formulated a comprehensive water resource management plan, set water resource management objectives and cooperated with the local government to handle emergencies and water conservation measures.
2. Short- and long-term strategies/plans for water resource mitigation management:
  - a. Short-term plan: OUCC continues to promote improvement projects in manufacturing processes and technology to conserve environmental water resources. The production capacity for reclaimed water is 1,000 MT per day, and the wastewater recovery rate is up to 70%, which can be used for cooling water tower replenishment.
  - b. Medium/long-term strategy:
    - Continue to plan and implement water-saving plans and management programs.
    - Evaluate/plan cooling tower exhaust condensate recovery.

Hazardous Waste  
Management

## RT-CH-150a.1

Amount of hazardous waste generated, percentage recycled

1. Hazardous waste generation: 0.03 MT
2. Hazardous waste recycling percentage: 100%

Community  
Relations

## RT-CH-210a.1

Discussion of engagement processes to manage risks and opportunities associated with community interests

OUCC adheres to the corporate spirit of taking from the society and giving back to society. It recognizes the requirements of the community and society through conversation and engagement, sponsors charity foundations of public welfare organizations or affiliated companies in various forms, and participates in social activities. Furthermore, we collaborate with suppliers to maintain partnerships and actively invite suppliers and employees to participate in social welfare activities.

Every year, OUCC transfers the allotted amount of the good-neighbor fund to the Linyuan Industrial Zone Management Center's good-neighborliness account, which the Linyuan District Office will apply for and use in various local public welfare events. We also make various donations to firefighting and journalism units. In 2022, the entire local public welfare spending amount was around NT\$3.92 million, of which the Good Neighbor Fund portion is approximately NT\$3.82 million, and the remainder of NT\$100,000. In 2022, a total of 116 street trees, roughly 2,926 square meters of sidewalks, and 4,020 square meters of roadways were adopted for air purification through greening and improvement of the road landscape.

Workforce  
Health & Safety

## RT-CH-320a.1

(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees

Item	Direct employees	Contracted employees
Total work hours	604,288 hours	83,221 hours
Number of People with Recordable Occupational Injuries	0 person	0 person
Ratio of Recordable Occupational Injuries	0 %	0 %
Number of fatalities as a result of occupational injuries	0 person	0 person
Percentage of fatalities as a result of occupational injuries	0 %	0 %





## RT-CH-320a.2

Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks

1. Ethylene oxide in our factory is a carcinogen, and the relevant evaluation and monitoring mechanisms are explained as follows:  
Our goal is to completely avoid work-related illness through proper prevention. Regular on-site and workplace inspections are the basis for a comprehensive occupational health assessment. A qualified risk assessment is the rudiment for evaluation and improvement. Occupational medical expertise is integrated into the Company's technical and organizational innovation programs. Analyze the occupational medical examinations concerning possible health hazards in the workplace.
2. Chemical, biological, and physical hazards (including noise, vibration, radiation, and exposure to heat and cold in the workplace) and ergonomic and psychosocial hazards are assessed and controlled in routine operations. The following measures are adopted as part of our health risk management depending on the level of control:
  - Eliminate or replace health hazards.
  - Implementation or improvement of technical and engineering controls.
  - Optimizing work organization (including minimizing the frequency and duration of activities).
  - Availability and correct use of personal protective gear.
3. The anti-pandemic plan launched during the COVID-19 period includes measures to protect the health of employees, contractors, and third parties. The actions adopted include advocating hygiene concepts, tracing and breaking infection chains, providing information, and raising employee awareness.

Product Design  
for Use-phase  
Efficiency

## RT-CH-410a.1

Revenue from products designed for use-phase resource efficiency

NT \$66,911,402 in 2022

Safety &  
Environment  
Stewardship of  
Chemicals

## RT-CH-410b.1

(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment.

1. Percentage of GHS health and environmental hazard substances contained in the product: 100%
2. Percentage of products containing GHS health and environmental hazard substances that have undergone a hazard assessment: 100%

## RT-CH-410b.2

Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact.

Please refer to the chapter "Innovative R&D / R&D Performance."

Genetically  
Modified  
Organisms

## RT-CH-410c.1

Percentage of products by revenue that contain genetically modified organisms (GMOs)

OUCC has no genetically modification-related products.

Management of the  
Legal & Regulatory  
Environment

## RT-CH-530a.1

Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry.

1. OUCC participates in public environmental regulation hearings related to the chemical industry.
2. Invited to participate in unscheduled industry forums to share management technology and practical experience. In 2022, we participated in a forum hosted by the Occupational Safety and Health Administration to conduct exchanges of international process safety management technology and to share experiences, improve the process safety of domestic industries, and integrate with international standards.
3. Regularly discuss the impact of environmental laws and regulations at the Monthly Linyuan Safety Meeting.

Operational  
Safety, Emergency  
Preparedness &  
Response

## RT-CH-540a.1

Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)

In 2022, there was no relevant incident.

## RT-CH-540a.2

Number of transport incidents

In 2022, there was no related incident.

## Activity Metrics

## RT-CH-000.A

Production by reportable segment

Product	Annual Production Capacity (1,000 MT)
EG	348
GAS	686
Specialty Chemicals	147



Climate-related Information of TWSE and TPEX Listed Companies

1.Risks and opportunities brought by climate change and related countermeasures taken by the Company

Disclosure Item		Implementation Status
1	Description of the oversight and governance by the Board of Directors and the management on climate-related risks and opportunities	See P.40-42 of OUCC's 2023 TCFD report for details
2	Description of how the identified climate risks and opportunities affect the businesses, strategies, and finances of the Company (in the short, medium, and long term)	See P.40-42 of OUCC's 2023 TCFD report for details
3	Description of the financial impact arising from extreme weather events and transitional actions	See P.40-42 of OUCC's 2023 TCFD report for details
4	Description of how the climate risk identification, assessment, and management processes are integrated into the overall risk management system	See P.40-42 of OUCC's 2023 TCFD report for details
5	Description of the used scenarios, parameters, assumptions, analysis factors, and main financial impacts if scenario analysis is used to analyze or assess the resilience against climate change risks	See P.40-42 of OUCC's 2023 TCFD report for details
6	Description of the content as well as the metrics and targets used for any transition plan to identify and manage physical risks and transition risks for any transition plan to respond or manage climate-related risks	1. Develop green and low-carbon chemical technologies in response to the carbon neutrality trend (details on innovative R&D P.18) 2. Develop Renewable Energy
7	Description of the basis for pricing if an internal carbon price is used	No internal carbon pricing mechanism has been promoted.
8	Description of the activities covered, scope of greenhouse gas emissions, timeframes planned, annual progress and so on if climate-related targets are set; description of the sources and quantity of carbon credits or the quantity of renewable energy certificates (RECs) for offset if carbon offset or RECs are employed to achieve relevant targets	See P.79-89 of this report for details.
9	GHG inventory and assurance (fill in details in the table below)	See the table below for details

1-1 Greenhouse Gas Inventory and Assurance Status

Scope 1	Total emissions (metric tons CO <sub>2</sub> e)	Intensity (metric tons of CO <sub>2</sub> e / NTD thousand)	Inspection / assurance agency	Inspection/ assurance status description
OUCC (Taipei Headquarters & Linyuan Plant)	304,37.1649	0.0024	SGS	In 2022, the data of the Linyuan plant passed the third-party verification and obtained the ISO 14064-1:2006 and ISO 14064-1:2018 verification statements.
Scope 2	Total emissions (metric tons CO <sub>2</sub> e)	Intensity (metric tons of CO <sub>2</sub> e / NTD thousand)	Inspection / assurance agency	Inspection/ assurance status description
OUCC (Taipei Headquarters & Linyuan Plant)	316,225.0684	0.0248	SGS	In 2022, the data of the Linyuan plant passed the third-party verification and obtained the ISO 14064-1:2006 and ISO 14064-1:2018 verification statements.
Scope 3 (item)	Total emissions (metric tons CO <sub>2</sub> e)	Intensity (metric tons of CO <sub>2</sub> e / NTD thousand)	Inspection / assurance agency	Inspection/ assurance status description
Greenhouse gas emissions caused indirectly by transportation	47,658.3045	0.0037	SGS	In 2022, the data of the Linyuan plant passed the third-party verification and obtained the ISO 14064-1:2018 verification statements.
Greenhouse gas emissions caused indirectly by the products used by the organization	409,282.0071	0.0320	SGS	In 2022, the data of the Linyuan plant passed the third-party verification and obtained the ISO 14064-1:2018 verification statements.

Sustainability Disclosure Indicators - Chemical Industry

No.	Indicator	Disclosure status	Remarks
I	Total energy consumption, percentage of purchased electricity, the utilization rate of renewable energy, and total self-generated and self-consumed energy	1. Total Energy Consumption: 2,834,659.82 GJ 2. Percentage of purchased electricity: 100 % 3. Renewable energy usage rate: 0 % 4. The total amount of self-generated and self-consumed energy: 0 GJ	
II	Total water intake, total water consumption, and waste (sewage) discharge according to legal requirements or voluntary disclosure	1. Total water intake volume: 1,990.891m <sup>3</sup> 2. Total water consumption volume: 1,507.473 m <sup>3</sup> 3. Total water discharge volume: 483.418 m <sup>3</sup>	
III	The "total amount of hazardous waste" produced by the "product production process" required by law or voluntarily disclosed, and the "recycling percentage."	1. The weight of hazardous waste produced by the product production process: 0.03 MT 2. Recycling percentage of hazardous waste produced by the product production process:100 %	C-0202
IV	Explain the number of occupational accidents and the rate.	1. Number of occupational accidents: 0 person 2. Occupational accident rate: 0 %	
V	Operating activities that have significant actual or potential negative impacts on local communities.	The chemical processes employed by OUCC and others in the same industry will pollute the air during the production process. If this is not managed properly, it can have an actual or potential negative impact on local communities.	
VI	The specific and effective mechanisms and actions taken by the enterprise itself and its suppliers to reduce the negative impact on the environment or society.	Environmental Prevention Mechanism (p.94) Transportation Zero Accident (p.115~116) Social Inclusion (p.100)	
VII	Product output by product category	· Ethylene oxide and ethylene glycol products: 348,021 MT · GAS products: 686,100 MT · Ethanolamine products: 26,599 MT · Ethylene glycol butyl ether products: 36,231 MT · EC products : 43,563 MT · EOD products: 40,547 MT	





## GRI Standards Index

<b>Statement of use</b>	OUCC has reported in accordance with the GRI Standards for the period 2022/1/1 to 2022/12/31
<b>GRI 1 used</b>	GRI 1 : Foundation 2021

GRI Standards	Disclosure Items	Page / Comment	Omission		
			Requirement	Reason	Explanation
GRI 2: General Disclosure 2021					
The organization and its reporting practices					
2-1	Organizational details	2			
2-2	Entities included in the organization's sustainability reporting	2			
2-3	Reporting period, frequency and contact point	3			
2-4	Restatements of information	2			
2-5	External assurance	2			
Activities and workers					
2-6	Activities, value chain and other business relationships	15			
2-7	Employees	57			
2-8	Workers who are not employees	58			
Governance					
2-9	Governance structure and composition	120			
2-10	Nomination and selection of the highest governance body	34			
2-11	Chair of the highest governance body	34			
2-12	Role of the highest governance body in overseeing the management of impacts	34			
2-13	Delegation of responsibility for managing impacts	35			
2-14	Role of the highest governance body in sustainability reporting	34			
2-15	Conflicts of interest	35			
2-16	Communication of critical concerns	34			
2-17	Collective knowledge of the highest governance body	34			
2-18	Evaluation of the performance of the highest governance body	34			
2-19	Remuneration policies	36			
2-20	Process to determine remuneration	36			
2-21	Annual total compensation ratio	36			

GRI Standards	Disclosure Items	Page / Comment	Omission		
			Requirement	Reason	Explanation
Strategy, policies and practices					
2-22	Statement on sustainable development strategy	6			
2-23	Policy commitments	43			
2-24	Embedding policy commitments	43			
2-25	Processes to remediate negative impacts	43			
2-26	Mechanisms for seeking advice and raising concerns	43			
2-27	Compliance with laws and regulations	43			
2-28	Membership associations	53			
Stakeholder engagement					
2-29	Approach to stakeholder engagement	49			
2-30	Collective bargaining agreements	58			
GRI 3 : Material Topics 2021					
3-1	Process to determine material topics	50			
3-2	List of material topics	52			
3-3	Management of material topics	52			
202 Market Presence 2016					
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	68			
202-2	Proportion of senior management hired from the local community	56			
303 Water and Effluents 2018					
303-1	Interactions with water as a shared resource	90			
303-2	Management of water discharge-related impacts	90			
303-3	Water withdrawal	91			
303-4	Water discharge	91			
303-5	Water consumption	91			
305 Emissions 2016					
305-1	Direct (Scope 1) GHG emissions	82			
305-2	Energy indirect (Scope 2) GHG emissions	82			
305-3	Other indirect (Scope 3) GHG emissions	83			
305-4	GHG emissions intensity	82			
305-5	Reduction of GHG emissions	82			
305-6	Emissions of ozone-depleting substances (ODS)	NA			
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	94			



GRI Standards	Disclosure Items	Page / Comment	Omission		
			Requirement	Reason	Explanation
403 Occupational Health and Safety 2018					
403-1	Occupational health and safety management system	122			
403-2	Hazard identification, risk assessment, and incident investigation	122			
403-3	Occupational health services	122			
403-4	Worker participation, consultation, and communication on occupational health and safety	122			
403-5	Worker training on occupational health and safety	122			
403-6	Promotion of worker health	123			
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	123			
403-8	Workers covered by an occupational health and safety management system	106			
403-9	Work-related injuries	113			
403-10	Work-related ill health	113			
407 : Freedom of Association and Collective Bargaining 2016 (Non-material topics, disclosed as required by government policies)					
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	-			No relevant occurrence
GRI 409 : Forced or Compulsory Labor 2016					
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	56 、 60			

## Assurance Statement



## ASSURANCE STATEMENT

### SGS TAIWAN LTD.'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE ORIENTAL UNION CHEMICAL CORPORATION'S ESG REPORT FOR 2022

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

SGS Taiwan Ltd. (hereinafter referred to as SGS) was commissioned by Oriental Union Chemical Corporation (hereinafter referred to as OUCC) to conduct an independent assurance of the ESG Report for 2022. The scope of assurance is based on the SGS Sustainability Report Assurance methodology and AA1000 Assurance Standard v3 Type 1 Moderate level to assess whether the text and data in accompanying tables contained in the report presented and complies with the GRI Universal Standard (2021) and AA1000 Accountability Principles (2018) during verification (2023/04/26~2023/05/24) at OUCC headquarter. The assurance process did not include the evaluation of specific performance information outside the scope, such as climate-related financial disclosures (TCFD) and sustainability accounting standards board (SASB).

SGS reserves the right to update the assurance statement from time to time depending on the level of report content discrepancy of the published version from the agreed standards requirements.

#### INTENDED USERS OF THIS ASSURANCE STATEMENT

This Assurance Statement is provided with the intention of informing all OUCC's Stakeholders.

#### RESPONSIBILITIES

The information in the OUCC's ESG Report of 2022 and its presentation are the responsibility of the directors or governing body (as applicable) and management of OUCC. SGS has not been involved in the preparation of any of the material included in the ESG Report.

Our responsibility is to express an opinion on the report content within the scope of verification with the intention to inform all OUCC's stakeholders.

#### ASSURANCE STANDARDS, TYPE AND LEVEL OF ASSURANCE

The SGS ESG & Sustainability Report Assurance protocols used to conduct assurance are based upon internationally recognized assurance guidance and standards including the principles of reporting process contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) GRI 1: Foundation 2021 for report quality, GRI 2: General Disclosure 2021 for organisation's reporting practices and other organizational detail, GRI 3: 2021 for organisation's process of determining material topics, its list of material topics and how to manages each topic, and the guidance on levels of assurance contained within the AA1000 series of standards.

The assurance of this report has been conducted according to the following Assurance Standards:

Assurance Standard Options	Level of Assurance
A	SGS ESG & SRA Assurance Protocols (based on GRI Principles and guidance in AA1000)
B	AA1000ASv3 Type 1 Moderate (AA1000AP Evaluation only)



**SCOPE OF ASSURANCE AND REPORTING CRITERIA**

The scope of the assurance included evaluation of adherence to the following reporting criteria:

**Reporting Criteria Options**

- |   |  |
|---|--|
| 1 | GRI Universal Standard (2021) (In Accordance with) |
| 2 | AA1000 Accountability Principles (2018)            |

- AA1000 Assurance Standard v3 Type 1 evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2018) at a moderate level of scrutiny; and
- evaluation of the report against the requirements of Global Reporting Initiative Universal Standard 2021 (GRI 2, GRI 3, 200, 300 and 400 series) claimed in the GRI content index as material and in accordance with.

**ASSURANCE METHODOLOGY**

The assurance comprised a combination of pre-assurance research, interviews with relevant employees, superintendents, Sustainability committee members and the senior management in Taiwan; documentation and record review and validation with external bodies and/or stakeholders where relevant.

**LIMITATIONS AND MITIGATION**

Financial data drawn directly from independently audited financial accounts, Task Force on Climate-related Financial Disclosures (TCFD) and SASB related disclosures has not been checked back to source as part of this assurance process.

**STATEMENT OF INDEPENDENCE AND COMPETENCE**

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

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

**FINDINGS AND CONCLUSIONS****ASSURANCE/VERIFICATION OPINION**

On the basis of the methodology described and the verification work performed, we are satisfied that the disclosure with inclusivity, materiality, responsiveness, and impact information in the scope of assurance is reliable, has been fairly stated and has been prepared, in all material respects, in accordance with the reporting criteria.

We believe that the organisation has chosen an appropriate level of assurance for this stage in their reporting.

**ADHERENCE TO AA1000 ACCOUNTABILITY PRINCIPLES (2018)****INCLUSIVITY**

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

**MATERIALITY**

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

**RESPONSIVENESS**

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

**IMPACT**

OUCC has demonstrated a process on identify and fairly represented impacts that encompass a range of environmental, social and governance topics from wide range of sources, such as activities, policies, programs, decisions and products and services, as well as any related performance. Measurement and evaluation of its impacts related to material topic were in place at target setting with combination of qualitative and quantitative measurements.

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

The report, OUCC's ESG Report of 2022, complies with the Requirements set out in section 3 of GRI 1 and is adequately in accordance with the GRI Universal Standards 2021, where the significant impacts on the economy, environment, and people, including impacts on their human rights are assessed and disclosed following the guidance defined in GRI 3: Material Topic 2021. The report has properly disclosed information related to OUCC's contributions to sustainability development. For future reporting, it is recommended to have more descriptions on how the organization has applied due diligence as a method for the identification and the evaluation of its impacts on the economy, environment, and people, as well as the role of the highest governance body in overseeing these processes.

Signed:

For and on behalf of SGS Taiwan Ltd.

Stephen Pao  
Knowledge Deputy General Manager  
Taipei, Taiwan  
25 June, 2023  
[WWW.SGS.COM](http://WWW.SGS.COM)



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## Accountant's Limited Assurance



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### 會計師有限確信報告

東聯化學股份有限公司 公鑒

本會計師接受東聯化學股份有限公司(以下簡稱「東聯化學」)之委任,對2022年度永續報告書中所選定之永續績效資訊(以下稱「標的資訊」),執行財團法人中華民國會計研究發展基金會所發布之確信準則所定義之「有限確信案件」並出具報告。

### 標的資訊及其適用基準

有關東聯化學之標的資訊及其適用基準詳列於附件。

### 管理階層之責任

東聯化學管理階層之責任係依據臺灣證券交易所「上市公司編製與申報永續報告書作業辦法」之規定,以及參考適當之基準編製標的資訊,包括參考全球永續性報告協會(Global Reporting Initiatives, GRI)所發布之2021年GRI準則(GRI Standards),東聯化學管理階層應選擇所適用之基準,並對標的資訊在所有重大方面是否依據該適用基準報導負責,此責任包括建立及維持與標的資訊編製有關之內部控制、維持適當之記錄並作成相關之估計,以確保標的資訊未存有導因於舞弊或錯誤之重大不實表達。

### 本會計師之責任

本會計師之責任係依據所取得之證據對標的資訊作成結論。

本會計師係依照財團法人中華民國會計研究發展基金會所發布之確信準則3000號「非屬歷史性財務資訊查核或核閱之確信案件」之要求規劃並執行有限確信工作,以對標的資訊是否存在重大不實表達出具有限確信報告。本會計師依據專業判斷,包括對導因於舞弊或錯誤之重大不實表達風險之評估,以決定確信程序之性質、時間及範圍。

本會計師相信已取得足夠及適切之證據,以作為表示有限確信結論之基礎。

### 會計師之獨立性與品質管理

本會計師及所隸屬組織遵循會計師職業道德規範中有關獨立性及其他道德規範之規定,該規範之基本原則為正直、公正客觀、專業能力及專業上應有之注意、保密及專業行為。

本事務所遵循品質管理準則1號「會計師事務所之品質管理」,該品質管理準則規定組織設計、付諸實行及執行品質管理制度,包含與遵循職業道德規範、專業準則及適用之法令規範相關之政策及程序。



### 所執行政序之說明

有限確信案件中執行政序之性質及時間與適用於合理確信案件不同,其範圍亦較小,因此,有限確信案件中取得之確信程度明顯低於合理確信案件中取得者。本會計師所設計之程序係為取得有限確信並據此作成結論,並不提供合理確信必要之所有證據。

儘管本會計師於決定確信程序之性質及範圍時曾考量東聯化學內部控制之有效性,惟本確信案件並非對東聯化學內部控制之有效性表示意見。本會計師所執行之程序不包括測試控制或執行與檢查資訊科技(IT)系統內資料之彙總或計算相關之程序。

有限確信案件包括進行查詢,主要係對負責編製標的資訊及相關資訊之人員進行查詢,並應用分析及其他適當程序。

本會計師所執行之程序包括:

- 取得東聯化學2022年度報告書,並閱讀其內容;
- 與參與編制確信標的資訊之相關人員進行訪談,以瞭解編制前述確信標的資訊之流程,以及攸關之內部控制;
- 基於對上述事項之瞭解,就確信標的資訊執行分析性程序,或於必要時檢視核對相關文件,已取得有限確信之證據。

### 先天限制

因永續報告中所包含之非財務資訊受到衡量不確定性之影響,選擇不同的衡量方式,可能導致績效衡量上之重大差異,且由於確信工作係採抽樣方式進行,任何內部控制均受有先天限制,故未必能查出所有業已存在之重大不實表達,無論是導因於舞弊或錯誤。

### 結論

依據所執行之程序及所取得之證據,本會計師未發現標的資訊有未依照適用基準編製而須作重大修正之情事。

安永聯合會計師事務所

會計師:劉榮進



民國一十二年六月三十日





附件：

編號	對應章節	標的資訊	適用基準
1	四之(一)：能源管理策略	(1)能源總消耗：2,834,659.82 GJ (2)外購電力百分比：100 % (3)再生能源使用率：0 % (4)自發自用能源總量：0 GJ	「上市公司編製與申報永續報告書作業辦法」第四條第二款第一目之消耗能源總量、外購電力百分比、再生能源使用率及自發自用能源總量。
2	四之(二)：資源循環再利用	(1)總取水量：1,990.891 立方公尺 (2)總耗水量：1,507.473 立方公尺 (3)總排水量：483.418 立方公尺	「上市公司編製與申報永續報告書作業辦法」第四條第二款第二目之總取水量、總耗水量或依法規要求或自願揭露之廢(污)水排放量。
3	四之(三)：環境預防機制	(1)製程產生有害廢棄物之重量：0.03 公噸 (2)製程產生有害廢棄物之回收百分比：100 %	「上市公司編製與申報永續報告書作業辦法」第四條第二款第三目之依法規要求或自願揭露之產品生產過程所製造之有害廢棄物總量，及回收百分比。
4	五之(二)：製程零傷害 五之(三)：運輸零事故	(1)職業災害人數：0 人 (2)職業災害比率：0 %	「上市公司編製與申報永續報告書作業辦法」第四條第二款第四目之職業災害人數及比率。
5	五之(四)：緊急應變機制	東聯所處的化學產業，於製程中會產生空污，若管理不嚴謹，則可能會對當地社區帶來實際或潛在負面衝擊之影響。	「上市公司編製與申報永續報告書作業辦法」第四條第二款第五目之對當地社區具有顯著實際，或潛在負面衝擊之營運活動。
6	四之(三)：環境預防機制 四之(四)：促進社會共融 五之(三)：運輸零事故	詳四之(三)：環境預防機制 詳四之(四)：促進社會共融 詳五之(三)：運輸零事故	「上市公司編製與申報永續報告書作業辦法」第四條第二款第六目之企業本身及其供應商，為降低對環境或社會之負面衝擊，所採取之具體、有效機制及作為。
7	附錄：永續揭露指標	<ul style="list-style-type: none"> <li>環氧乙烷及乙二醇產品：348,021 公噸</li> <li>GAS 產品：686,100 公噸</li> <li>乙醇胺產品：26,599 公噸</li> <li>乙二醇丁醚產品：36,231 公噸</li> <li>碳酸乙烯酯產品：43,563 公噸</li> <li>EOD 產品：40,547 公噸</li> </ul>	「上市公司編製與申報永續報告書作業辦法」第四條第二款第七目之依產品類別之產品產量。

