

ORIENTAL UNION CHEMICAL CORPORATION



ESG Report

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About this Report

Welcome to the ESG Report of the Oriental Union Chemical Corporation (stock code:1710, hereinafter referred to as the “OUCC”) published in 2021. 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 them from our official website: <https://www.oucc.com.tw/en>

Reporting Period and Organizational Boundaries

The ESG Report discloses the ESG management policy, material topics, responses, and action performance of the OUCC in 2021(Jan. 1 to Dec. 31). Some issues tracing back to 2019 or 2020 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 2021
- Date of next publication: June 2023

Writing Reference and Guarantee

The ESG Report relevant information and data are composed and provided by the OUCC Taipei Headquarters and Linyuan Plant to ensure it meets the requirements of the ESG report information. The relevant information, data, review, and data verification are documented, verified, and approved by each department head. The final issues and information are reviewed and authorized by the directors and top management. In terms of information accuracy, we also obtained the SGS-Taiwan guarantee to show our achievements in all aspects of ESG to the majority of stakeholders through the overall structure of the enterprise spirit of “sincerity, diligence, thrift, prudence and innovation.”



Sustainability Report

- GRI Standards: Core Option
- Sustainability Accounting Standards Board, SASB: Chemical Standard
- AA1000 (2008) AS: Type I intermediate assurance level
- ISAE 3000 Independent Limited Assurance



Governance

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



Environment

- ISO 14001
- ISO 14064-1
- ISO 50001



Society

- ISO 45001

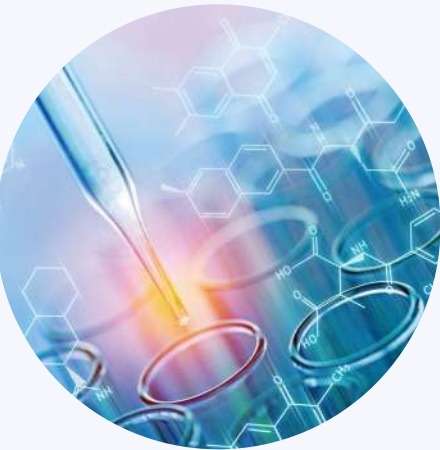
Feedback

If you have any comments on the “Oriental Union Chemical Corporation 2021 ESG Report,” you are invited to forward your valuable comments and advice to keep us moving towards the concept of sustainable governance.

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CHAIRMAN'S MESSAGE

Thank you for taking your time to read the OUCC Sustainability Report 2021. Envisioning to be the most competitive and a world-class company specialized in materials chemistry, OUCC upholds its corporate spirit of "Sincerity, Diligence, Thrift, Prudence and Innovation". To achieve the goal, OUCC continues its devotion to ESG by implementing the sustainability strategies and practices four aspects, i.e., environmental protection, technology, responsibility and services. This customer-driven company has been working relentlessly towards the goal of sustainability by means of technical innovation and transformation.

OUCC firmly believes that the chemical industry plays a key role in sustainable product development. Our objective of innovation is to make OUCC "the most distinguished materials chemistry company". The technical capabilities needed for R&D, equipment implementation, market development and applications as well as for manufacturing specialty chemicals and high-tech chemical materials are built progressively based upon innovative ideas and concepts. By applying and developing green and sustainable chemicals and expanding the market of green chemicals, we are guiding the transformation of chemical industry towards sustainable development.

In response to global climate change, the Task Force on Climate-Related Financial Disclosures (TCFD) framework is introduced in order to establish carbon governance mechanism, identify and assess climate issues that may bring risks and impact on OUCC operations, and take proactive carbon reduction and adjustment actions.

In order to mitigate the impact of carbon emissions, OUCC integrates and streamlines its manufacturing processes. Carbon reduction is implemented through the manufacturing processes and investing in renewable energies. By doing so, the product carbon footprint is eliminated and the production cycles and energy consumption are minimized. OUCC strives to search for new solutions to the transformation of the chemical industry chain and to lead the entire chemical industry towards the ultimate goal of carbon neutrality.

The above goals can be only achieved with the all-out efforts from the entire OUCC staff and supply chain partners. Therefore, OUCC continues to optimize its management systems and improve its health and safety equipment in order to assure the safety and health of its employees and supply chain partners. OUCC also delivers best quality assurance to its customers with advanced manufacturing technologies and continues to create values for its shareholders and stakeholders.

OUCC pledges to become a diverse and sustainable company and to plan for a better future for chemical industry. In addition to expanding operational advantages and improving competitiveness, OUCC also continues to implement a variety of sustainability management practices. The goals are to create unlimited possibilities for chemical industry and to bring new and unique values to the customers, shareholders, employees and the general public. Meanwhile, we are also expecting to work with all stakeholders and looking forward to your advices.

Chairman
Oriental Union Chemical Corporation

徐旭東



OUCC Sustainable Development Strategy

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 to develop innovation 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 its cornerstone for sustainable development



Short-term Goal (2022)

- 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 ethanolamine coproducts and polyetheramine related products and set up mass production factories

Mid-/Long-term Goal (2023-2032)

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

創新

Innovation

Sincerity

誠

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 (2022)

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

Mid-/Long-term Goal (2023-2032)

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





Diligence



Diligent Partners

Upholds “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 (2022)

- 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 (2023-2032)

- Conduct training courses in cooperation with the vocational training center

Satisfied Customer

Short-term Goal (2022)

- Continue to effectively implement the ISO management system

Mid-/Long-term Goal (2023-2032)

- Continue to optimize control measures and improve customer satisfaction

Chemical Supply Chain

Short-term Goal (2022)

- 100% of new suppliers have signed the "Suppliers' CSR Commitments"
- The CSR commitment statement incorporated in the annual contract upon renewal
- Existing suppliers have completed the on-site or written evaluation

Mid-/Long-term Goal (2023-2032)

- 100% of freight forwarders have acquired ISO 45001 certification
- Contractors achieve zero accident and 990,000 safety man-hours



Thrift



Solid Contributions

Committed to the improvement of the environment, social integration, and sustainable future with faith taken from society and also by giving back to society, as well as with a “down to earth” attitude and “truthful” action



Short-term Goal (2022)

- 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 (2023-2032)

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



Social Inclusion

Short-term Goal (2022)

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

Mid-/Long-term Goal (2023-2032)

- Contribute to the society by using core competence, in line with the faith of “taken from society and feedback to society”

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 (2022)

- 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 drill for all plants and suppliers
- Results of on-site inspections of the freight forwarders are listed in the allocation standard

Mid-/Long-term Goal (2023-2032)

- Promote waste management carbon reduction KPI to achieve carbon reduction goals
- Optimize prevention and control of equipment, cooperate with regular outsourced environmental protection institute for self-inspection and 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"

慎

Prudence



INNOVATIVE OUCC

OUCC aims to be “the most distinguished materials chemistry 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 of high added value and the specialty chemicals.

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 aims 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.



- Promoted circular economy to generate profit of NT\$ **12.40** million per year
 - R&D investment totaled NT\$ **157** million
 - Developing innovative technologies and applying for international patents.
- As of now, OUCC has obtained **4** Taiwan patents, **4** U.S. patents, **4** Japanese patents and **1** China patent



Implementing the Circular Economy

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



New Business Model: The Circular Economy

Through technological innovation, and its strategy in “circular economy,” OUCC expects to implement the core concept of “minimizing environmental impact and maximizing resource value” in the manufacturing process and establish a circular economy model.

We have developed our own potassium iodide (KI) recycling technology, which turns KI liquid waste into usable regenerative resources and creates extra values. This process cuts the cost of liquid waste treatment. In addition, the company also makes profits from the by-products generated during the manufacturing process.



<p>EC process</p> <p>▼</p> <p>KI waste solvent</p> <p>▼</p> <p>Outsourcing</p> <p>Traditional Thinking</p>	Process	<p>EC process</p> <p>▼</p> <p>KI waste solvent</p> <p>▼</p> <p>Reuse resources</p> <p>▼</p> <p>Invest in a new process</p> <p>Circular Economy Thinking</p>
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\$7.98 million per year	Outsourcing costs	NA
NA	Economy benefits	1. Saved KI procurement cost of NT \$2.68 million 2. MEG recycling with benefit of NT\$1.74 million 3. Saved approx. NT\$7.98 million for outsourcing
outsourcing processing costs NT\$7.98 million (Note)	Total	Benefits NT\$12.40 million
NA	Envrinmental benefits	1. Reduced energy usage of 399 tons waste solvent transportation 2. Reduced carbon emissions of 36,954 t-CO ₂ e 3. Reduced the environmental impact caused by waste liquid leakage
NA	Society benefits	1. The income generated from reusing the byproduct was used to upgrade the employees' occupational health and safety and welfare. 2. It decreased the risk of leakage from the transportation of waste liquid, and protected the safety of community residents (such as causing skin rashes).

Note: the actual potassium iodide (KI) produced in 2021 were 399 tons, with an outsourcing cost of approximately NT\$7.98 million.

The Circular Economy -Air Separation Units

OUCC’s sales strategies of circular economy, by way of investing in the Air Separation Unit to supply excess industrial gas to Formosa Plastics Group (FPG), has created a win-win by turning trash into gold, and waste gas into company revenue.

Past method	<ul style="list-style-type: none"> Due to the saturated demand of industrial gas demand in Linyuan industrial area, the remaining industrial gas can only be emitted, and the emission volume reaches 7,500MT/month.
New circular economy method	<ul style="list-style-type: none"> The original 7,500MT/month discharged industrial gas have all turned into operating income, adding approximately NT\$10 million of benifits 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.

Innovative Process, Circular Sustainability

The development and design of the “distillation/hydration equipment” allows potassium iodide (KI) waste solution produced by the ethylene carbonate (EC) plant to be concentrated to upgrade the used to be charged “external waste” into reusable resource products, which can then be utilized in new production processes. The potassium iodide (KI) waste solution was successfully concentrated to 15% potassium iodide (KI) for recycling with the simultaneous production of a by-product, monoethylene glycol (MEG).

1. Economic benefits

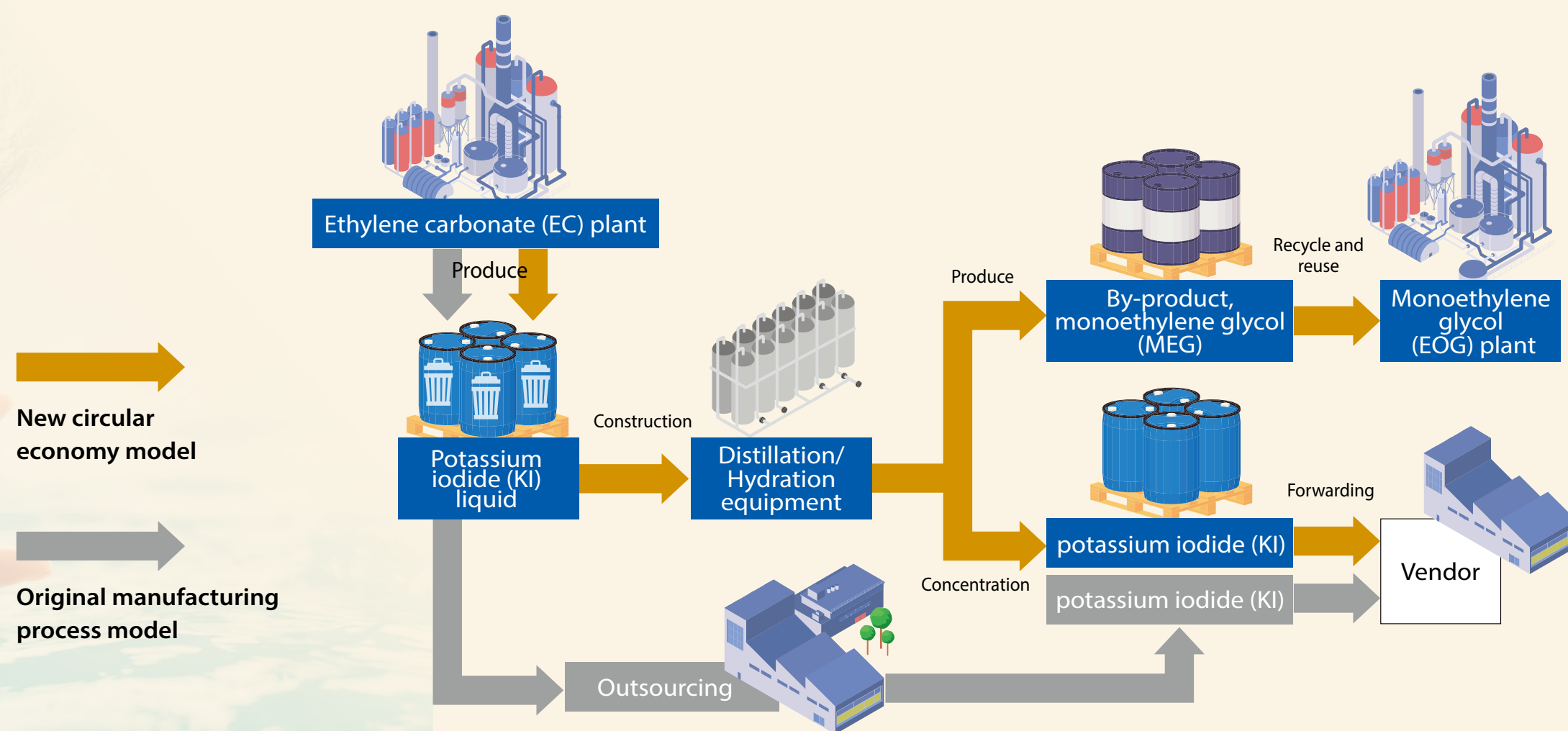
- (1) OUCC produced about 399 metric tons of potassium iodide (KI) waste liquid, and reduced external disposal fee totaling NT\$7.98 million.
- (2) OUCC produced approx. 108 tons of concentrated EC85 (KI-15), saving the potassium iodide (KI) procurement cost of NT\$2.68 million.
- (3) OUCC produced approx. 104 tons of byproduct monoethylene glycol (MEG), with the recycle and reuse benefit of NT\$1.74 million.

2. Environmental benefits

- (1) A total of 399 tons of waste liquid transportation was reduced, a decrease of 36,954kg-CO₂e.
- (2) It mitigates the impact on the environment resulted from waste liquid leakage and incineration.

3. Social benefits

- (1) The income generated from the reuse of the byproduct was in turn used to upgrade occupational health, safety and welfare of employees.
- (2) The decrease of the leakage risk from the waste liquid transportation secures the safety of community residents and the public (e.g. causing skin rashes).



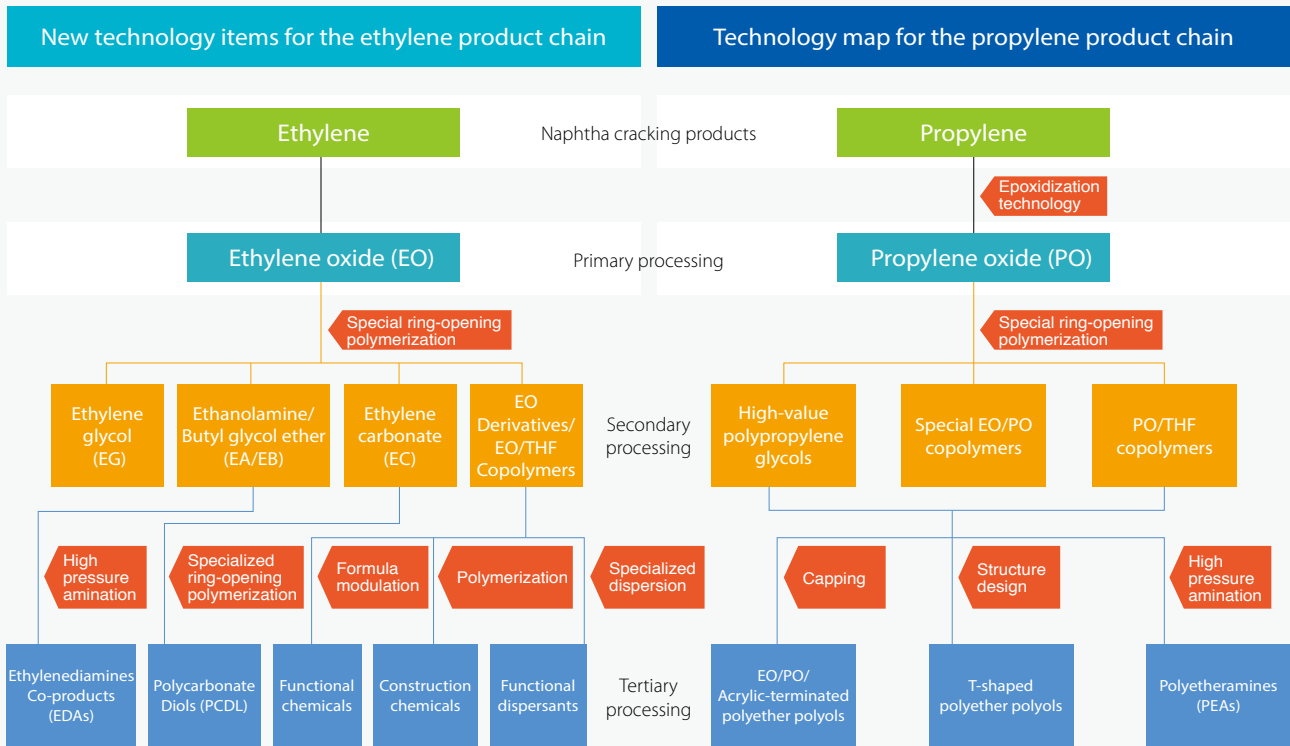
Innovative R&D

Vision of OUCC’s Innovative R&D

- Become the helmsperson in the petrochemical and specialty chemical industry; accelerate the development of core technologies and new high value-added products to enhance the competitive advantage in the industry
- Increase domestic and international exchanges, and move towards the development of multiple fields including 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

OUCC’s highly educated R&D team, the high-tech research fields in which OUCC invested in not only help to expand core business applications, but also adapt to market changes and future development trends of chemical materials. OUCC actively develops new products in different domains based on the business strategy of product diversification.

As to the R&D, in addition to the existing team, a new product development department has also been established to accelerate the development of new high value-added products with the most solid configuration to strengthen our competitive advantage and create new value. Current research and development domains include:



R&D Performance

Though with EG as OUCC’s prime product, we also actively develop specialized products to diversify operations and decentralized product risks, considering the risk of business cycle of bulk petrochemical raw materials such as EG.

In recent years, the R&D has continued developing high quality 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.

In response to the trend of green chemistry, we have successfully developed high performance water reducing agent and slump retention agent for ready-mixed concrete, as well as retarding, high-fluidity admixtures. These products have been validated by many domestic and international customers.

In 2021, several products that can be used on antibacterial paper were developed. The zinc oxide antibacterial agent was validated by the Hualien Plant of Chung Hwa Pulp Corporation and used to produce 10 tons of antibacterial paper. In addition, to expand the range of product lines using materials other than ethylene, a series of high-value, deep-processing technologies are developed, achieving the goals in broadening the core product application and increasing market shares of the innovative product applications.

Innovative Technology

Innovative technology	Description
EO/PO derivatives synthesis technology	<ul style="list-style-type: none">● EO/PO/EC ring-opening technique● EO/PO/THF ring-opening technique● Free radical polymerization technique● Esterification/Transesterification/polyester technique
EO/PO derivatives formula modulation technology	The products can be applied to textile dyeing, agricultural chemicals, construction materials, electronic chemicals, personal and household cleaning, etc.
Propylene epoxidation technology	Develop independent catalyst technology to produce PO, to be used as raw material for polyether polyol, polyether amine, etc. to achieve an integrated product chain from raw material to finished product.
Specialized ring-opening copolymerization technology	Continue to create specialized ring-opening copolymerization technology in order to produce low unsaturated, high molecular weight, highly active high-grade polyether polyols which are applicable in high spec./special spec. resin products.
Polyether alcohol-amination technology	The catalyst technologies for amination of alcohols and ethers are developed and applied to synthesize a multitude of polyether amine products that are used in the industries of epoxy, polyurethane (PU) and polyamide fiber.
Alcohol amine amination technology	OUCC has developed the catalyst technology for amination of alkamine, which is used to synthesize ethylenediamine, diethylenetriamine, aminoethyl ethanolamine, and piperazine co-products that are used in resin admixtures and industries of electroplating, pharmaceuticals, agriculture, textiles, pulp paper and solvents.
Transesterification polymerization technology	The catalyst systems for transesterification and aggregation during transesterification are developed and applied to synthesize polycarbonate diol (PCDL) related products and used in the soft segment composition of polyurethane (PU) molecular structures to improve the softness and resilience of PU.

Innovative Product

Category	Subject	Contents
EOD/POD	Surfactants	<ul style="list-style-type: none"> Downstream applications of EO/PO derivatives include nonionic surfactants, cement water-reducing agent, oil agent, detergent, and various intermediates Development and application of fine chemicals, mainly covering plastic rubber, textile dyeing, coatings, pesticides, electronic semiconductors, metal processing, building construction and household chemicals
	Purified MPEG/PEG	<ul style="list-style-type: none"> Used in polyurethane PU processing. This polymer material is widely used in adhesives, coatings, low-speed tires, washers, and for car mats Polyurethane is also used in the manufacture of a variety of foams and plastic sponges for daily use
	EO/PO/THF Copolymers	<ul style="list-style-type: none"> Copolymers are mainly used to adjust the physical properties of polyurethane (PU) such as flexibility, hydrophilicity/hydrophobicity, moisture permeability, dyeing affinity and low-temperature elasticity The products are mostly made into waterproof breathable fabrics or used in products such as clothing, functional sportswear/footwear, furniture, etc.
EOD/POD Derivatives	Concrete admixtures	<ul style="list-style-type: none"> Concrete admixture is a substance which when added to a concrete mix improves the properties of the concrete Poly-carboxylic acid is a cement water-reducing agent and helps to improve the strength of the concrete. Also, the admixture will reduce cement consumption while workability and strength maintained
	Daily chemicals/ industrial detergents	<ul style="list-style-type: none"> Develop daily-use 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 Develop low foam, high efficiency surface cleaners for metals and recyclable plastics
	Dyeing and finishing auxiliaries	<ul style="list-style-type: none"> Develop functional agents such as scouring, soaping, reduction, dye dispersion, and hydrophilic softening for post-finishing in textile dyeing processes
	Ingredients of functional surfactants	<ul style="list-style-type: none"> Non-ionic emulsifiers to be used in pesticides (e.g., herbicides, insecticides), mineral oil, silicone oil, etc., are developed Inorganic powder (e.g., carbon composites, TiO2) and dye dispersants are developed Silicon anti-foaming agents, water/oil repellents and agriculture spreading agents are developed Demulsifiers for crude oil and latex are developed
Polyetheramine	Monoamines, diamines, polyamine and polyetheramine derivatives	<ul style="list-style-type: none"> OUCC owns the exclusive technology for direct amination of alcohols and ethers, which retains the excellent properties such as low viscosity, high permeability, anti-yellowing and heat resistance They are used in high-performance composite materials, polyurea, and anti-scratch, weather-resistant materials. Examples include large high-strength structures such as wind turbine blades, dams, bridge piers, as well as cement additives, epoxy flooring materials, paints, decorative ornaments
Ethanolamine reductive amination co-products	Ethylenediamine, diethylenetriamine, aminoethyl ethanolamine, trivinyltetramine, piperazine and related co-products	<ul style="list-style-type: none"> OUCC owns the exclusive technology for direct amination of alcohols and ethers, and the main products are ethylenediamines, diethylenetriamines, triethylenetetramines, aminoethyl ethanolamines, piperazine and related products. They can be applied to petroleum, pesticide, medicine, light textile, chemical fiber, paper making, metallurgy, electroplating, solvent, resin additive and other fields.
PU Raw Materials	EOPO polyether polyols	<ul style="list-style-type: none"> Polyether polyols have the properties of low degree of unsaturation, low VOC and uniform molecular weight properties They can be used in waterproof breathable fabrics, adhesives, sealants, elastomers, and polyurethane resins such as rigid foams and soft foams, to improve the quality and physical properties of the products
	Polycarbonate diols (PCDL)	<ul style="list-style-type: none"> Polycarbonate Diols (PCDL) are useful to improve the softness and resilience of polyurethanes and have better performance in many aspects such as hydrolysis resistance, heat resistance, weather resistance and oxidative degradation resistance. Commonly used as soft segment modifiers to adjust the physical properties of PU products

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.

OUCC invests corporate resources and cooperates with relevant R&D units to carry out various research technologies and create a new pattern of green fine chemistry. The annual investment deduction project has also been approved by the government (the investment subsidy in 2021 totaled NT\$12 million), and gradually develop in the direction of high value-added industries.

R&D Investment

	Unit	2019	2020	2021
R&D amount	Million (NT\$)	161	150	157
Total revenue	Million (NT\$)	11,763	9,799	14,674
Ratio	%	1.4	1.5	1.1

Note: Individual operating income.



2021 R&D Collaborations

Category	Research Program/Unit	Description
Equipment	Three sets of automated fixated continuous production equipment	The technologies of producing polyether amine products via the amination of alcohols and producing ethenylamine products via the amination of alkamine are developed. The technologies include catalyst screening, process conditions establishment and optimization, as well as related information such as shutdown or restart modes and the establishment of emergency response measures
	Supplying semiconductor grade CO ₂ gas - analysis equipment upgrades: (1) Gas analyzer (2) Dynamic dilution system (3) Moisture analyzer	Improving the reliability of analysis equipment, increasing the accuracy and precision of analysis methods, accelerating data availability and obtaining validation of quality system from semiconductor manufacturers such as TSMC
	Producing new specialty chemicals (polyether amine, PEA and ethylenediamine, EDA): (1) gas chromatography (GC) machine (2) automatic titrator	Implementing quality control for the intermediates and products of new specialty chemicals (polyether amine, PEA and ethylenediamine, EDA) to ensure smooth manufacturing processes and good product quality
	Autosampler for titrator	To help relieve the heavy workload from increasing analysis cases of amination products as well as titration (for detection of primary, secondary and tertiary amines), autosamplers are introduced to improve the efficiency of analysis
Industry academy cooperation	Research on the applications of new biodegradable polyester films	<ul style="list-style-type: none"> Developing the polyester films that are biodegradable (using enzymes) and can be applied onto laminated paper through hot melt process Establishing analysis and test methods for the physico-chemical properties of the material Establishing the method for testing enzymatic degradation rate of the material and using the method as reference for external verification Preparing patent research papers for future patent applications



Taiwan’s First Reductive Amination Process Invented

The technical level for carrying out a reductive amination process is relatively high. The keys lie in the control and adjustment of catalysts and the building of reaction system. **The products are advanced composite materials** that are used in wind turbine blades, yachts, water- and corrosion-resistant paints, and anti-scratch, weather-resistant structures. Currently, **OUCC is the only company that owns this technology and is capable of mass production**. The products, manufactured using this technology, are only available from our company in the domestic market, and rare in Asian market as well. Implementation of this project enriches OUCC’s product offerings of high-value specialty chemicals. In addition, it conforms to the country’s green energy plan and achieves the government’s goal of **promoting the production localization of key materials**.

Two key technologies are involved in reductive amination. One is the reductive amination techniques for polyether polyols. The techniques include commercial catalysts screening, development of proprietary catalyst techniques, establishment of mass production and manufacturing process conditions. The polyether polyols produced by OUCC are used to synthesize a variety of polyether amine products. The techniques have passed a one-year long verification and are confirmed to have business values. The manufacturing plant will be completed and start mass production in 2022. As per plan, the polyether amine products including monoamines (MA series,) and diamines (DA series,) and **triamines are scheduled for production in 2023**. The other is **the reductive amination techniques for ethanolamine**. The techniques include the development of proprietary catalysts, the establishment of mass production and manufacturing process conditions. The monoethanolamines produced by OUCC are used as raw materials to produce ethylenediamines, diethylenetriamines, triethylenetetramines, amino-ethylethanolamines, piperazine and related products. **The plant will be completed and start mass production in 2022**.



Technology Innovation · Global Patent - Cumyl-Hydroperoxide Propylene-Oxide (CHPPO)

Since there is still no domestic factory and technology for producing PO, the market demand of propylene oxide depends on imports. In response to this, **OUCC has exerted its innovative R&D ability to develop four independent catalyst-related technologies and applied for multi-national patents**. So far, two independent catalyst technologies have passed the review and certification of Taiwan and the United States.

The catalyst has excellent catalytic activity (CHP conversion >99%, PO selectivity >97%), and its production and regeneration procedures are easier than those of the key Japanese supplier. **The production method and regeneration process of OUCC’s catalysts are more streamlined, requiring simpler equipment and significantly reducing production costs**.



Innovation in Environmental and Industrial Applications

Aside from developing its own proprietary technology for the production of high-valued fine chemicals, OUCC also takes into account the environmental protection, actively reduces energy consumption, achieving a win-win situation with high-valued products and revenue increase at the same time.

OUCC has successfully developed high efficiency water reducing agents, slump agents applicable for ready mixed concrete, and coagulation-retardant, high flow admixture for downstream formulation and ready mixed plants, which can be widely applied to the construction industry in the future.

Take the production of 1,000 tons of high efficiency water reducing agent WR01 as example, it is estimated to save 40,000 kWh of electricity and 160 tons of steam, which is equivalent to reducing approximately 59 tons of CO₂ emissions; if reduced packaging materials and lessened transportation were added, the effects of carbon reduction would be even more significant.

Additionally, OUCC utilized transesterification, sol-gel method and formulated modulation techniques, which successfully developed a series of specialized functional detergents with "hydrophilic and soft, moisture-absorbing and quick-drying, antibacterial and anti-mite, and cooling" features. The above products have entered the mass production phase, brought high-value fine chemicals into our lifestyles, and created more application values.



Development of High-value Specialty Chemicals

OUCC is committed to developing specialty chemicals. In 2021, numerous products such as resin/TiO₂ dispersants, recycled plastic cleaners, low-foam cleaners, defoaming agents/foam depressants and zinc oxide antibacterial agents that can be used on anti-bacterial paper were developed. Among them, zinc oxide antibacterial agents DCA03 & ABP01 have passed the 10-ton performance verification of antibacterial paper produced by Chung Hwa Pulp Corporation Hualien Plant.



Respect Intellectual Property Rights

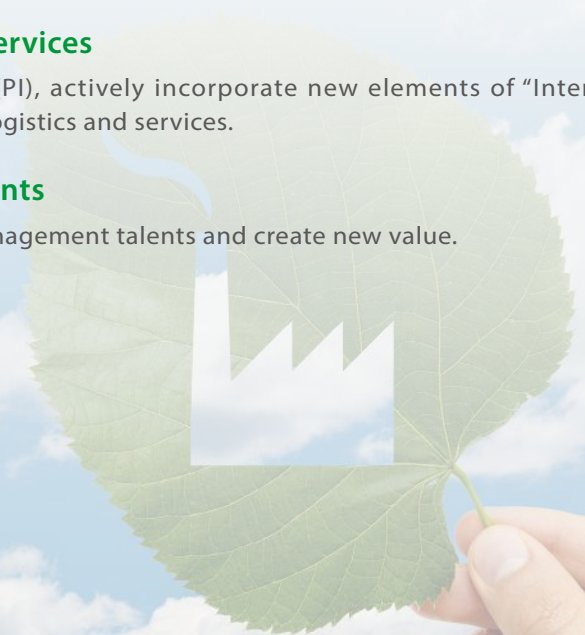
OUCC values innovation and shows respect for patented technologies by establishing its Procedure for Outsourcing Processing Technology to support the development of innovative technologies. OUCC takes actions to ensure the intellectual properties are well protected. The terms regarding patent rights, copy rights, intellectual property rights and confidentiality are clearly set out in all contracts to ensure the integrity of technology rights. This not only gives the company's main products advantages but also boosts the sustainable competitiveness of the business.

Green Chemical and Smart Manufacturing

OUCC 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, OUCC 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.

OUCC "Green Chemistry and Smart Manufacturing" Promotion Strategy

- 1 Process technology in compliance with regulations**
Purchased technologies are those already developed in compliance with the relevant regulatory requirements.
- 2 Green and Innovative R&D**
Innovative technology development must meet the requirements of environmental protection agency, and the research and development unit is encouraged 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.
- 3 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.
- 4 Cultivate AI management talents**
Cultivate a new generation of AI management talents and create new value.



Self-developed Operational Intelligence System

OUCC is keen on digital transformation by 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 who have no information background still enjoy the benefit of learning. **Decision making can be carried out effectively and reliably even without the assistance from IT department**, marking a milestone for digital transformation.

Improving Customer Services with IoT

Take liquefied gas for example, OUCC 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, **OUCC has selected its employees to Taiwan AI Academy for training**, 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.

Technologies Curb The Spread of Covid-19 Pandemic

Developed by OUCC, 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.

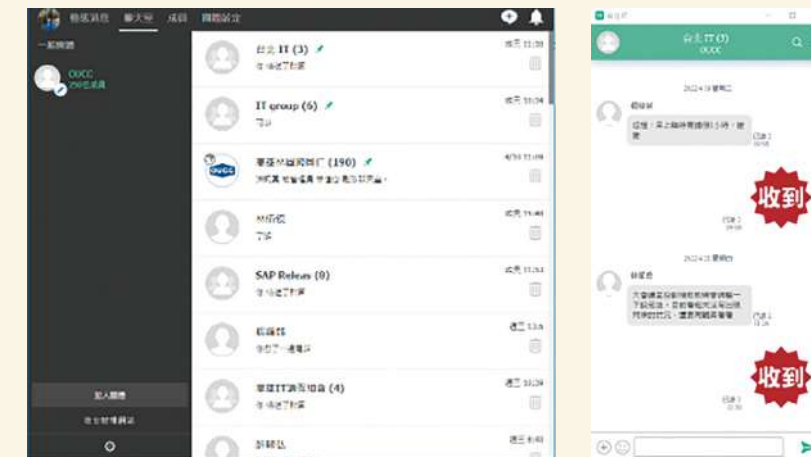
The Health Monitoring System is particularly useful in tracking and ensuring the health conditions of OUCC employees during the pandemic. In addition, **a total of 44,519 documents were processed in 2021 using electronic document management system**, which reduces the carbon emissions effectively.

In addition, **OUCC strongly supports a Work from Home protocol.** With the help of technologies, the employees are commuting and travelling less than before (**as many as 1,560 hours of teleconferencing were held in 2021**). This practice not only protects the health of the employees but also helps reduce carbon emissions.



Internal Communication Tool - Coline

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



<https://bre.is/g7DFefNv>

Gas Delivery - Smart Dispatching

OUCC has started using its Smart Dispatching System since 2021. 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.



ETHICAL GOVERNANCE

The "Philosophy of Integrity" is the foundation for sustainable development of OUCC. We have set up the policies of "Best Practice Principles" and "Discipline Measures against Violation of the Codes of Ethics and Best Practice Principles." A sound governance structure has also been established with a rigorous risk control mechanism, best-practice management has been implemented and an environment has been created to foster the sustainable governance of the enterprise.



- Board of Directors' performance assessment was conducted independently by a third party in 2021. OUCC Board of Directors was rated **Advanced, Advanced, Benchmarking** in the metrics of structure, members, process and information, respectively
- Annual operating income of NT\$ **14.673** billion
- Continue to strengthen the information security mechanism with **Business Continuity Planning (BCP)**
- In 2021, 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: 329
- Manufacturing location: Kaohsiung & Yangzhou

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

Established in 1975, Oriental Union Chemical Corporation (referred to as OUCC hereinafter) is the key player of the Far Eastern Group's petro-chemical energy business. The company was listed in TAIEX since 1987 (stock code 1710, a 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.

OUCC has actively implemented innovative R&D in high value-added, growth-oriented fine chemicals and specialty chemicals, and been gradually developed into a diversified and sustainable company that covers traditional chemicals, specialty chemicals, and high-tech chemical materials to achieve the goal of constantly creating new value for customers, shareholders, and employees, establishing new industrial value.

Product	Plants	Annual Production Capacity (10,000 tons)
EG	Linyuan	42.6
	Yangzhou	53.6
GAS	Linyuan	75.8
	Yangzhou	43.1
Specialty Chemicals	Linyuan	16.5
	Yangzhou	4.4

Note: Please refer to 2021 Annual Report p.81 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.



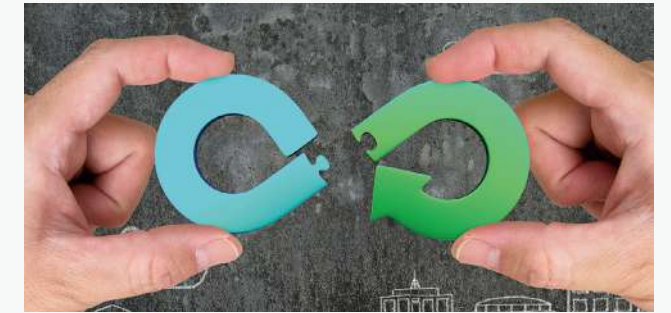
- Committed to improving process design, pursuing green production, minimizing the impact of operating production on the environment, and implementing balanced development of industrial production and environmental protection.
- OUCC has implemented the ISO 14001 Environmental Management System in 1998, 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 is integrated to reduce energy consumption.



- OUCC values the importance of industrial safety & health and human rights, and has obtained ISO 45001:2018 certificate to build a friendly and safe workplace environment.
- The Linyuan Plant was awarded the recognition of "5 Million Accident-Free Man-Hours Record" in 2021, and continue 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 in 2021 accountable for the work promotion.
- 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

The company was authorized for incorporation with a share capital of NT\$569,250 thousand.

1975

Ethylene glycol plant construction completed.

1978

Completed the construction of the ethylene glycol wastewater treatment plant in compliance with national standards.

1992

Obtained ISO 14001, and achieved a record of 2 million consecutive incident-free man-hours.

1998

Stock approved for sale.

1987

Obtained certifications of ISO 9001 (Quality Management System) and OHSAS 18001 (Occupational Health and Safety Management System).

2002

Completed the multi-functional pilot plant that was designed and constructed by the OUCC as a good foundation for future technology development, process design, as well as new product pilot run.

2005

- Completed the Oriental Petrochemical (Yangzhou) Corp. ethylene oxide derivatives plant with an annual capacity of 60,000 tons.
- Investment Commission approved by MOEA in PPL investment in Far Eastern Union Petrochemical (Yangzhou) Ltd.

2012

Completed the reconstructrue of the ethanolamine plant I into an ethylene glycol monobutyl ether plant with an annual output of 20,000 tons.

2017

- Introduced ISO 45001:2018 Occupational Health and Safety Management System certification.
- Far Eastern Union Petrochemical (Yangzhou) Ltd, was rewarded the second annual Jiangsu Province Zi Feng Award for "Growth Type Enterprise."
- Accumulated 4.31 million incident free man-hours in 2019.
- Rewarded the 2019 CSR report award by TCSCA.

2019

- Continued to maintain the validity of ISO 14001:2015 Environmental Management System certification.
- Continued to maintain the validity of the ISO 45001:2018 Occupational Safety and Health Management System certification.

2021

2009

Won the "National Industrial Zone Safety Partnership Excellence Award - Premium Business Unit" medal from the Council of Labor Affairs, Executive Yuan.

2016

- Completed the gas plant with annual output of 340,000 tons at Linyuan site.
- Far Eastern Union Petrochemical (Yangzhou) Ltd. officially started commercial operation of the ethylene oxide and ethylene glycol plants with respective annual output of 400,000 and 500,000 tons.
- Completed construction of the CO₂ plant III at Linyuan site with an annual output of 40,000 tons.

2004

Received the 2004 Taiwan Industrial highest award "Industrial Sustainability Elite Award," which is a symbol of sustainable development for enterprises.

2000

Implemented an enterprise resource planning system (ERP).

2020

- Obtained ISO 50001:2018 Energy Management System certification.
- Obtained ISO 45001:2018 Occupational Health and Safety Management System certification.
- Received the SGS CSR Awards - 2020 Sustainable Elite Award.

2018

- Obtained ISO 14001:2015 (Environmental Management System) certification.
- Completed the technical revamp of EOD plant at Oriental Petrochemical (Yangzhou) Corp, increasing EOD annual output to 66,000 tons.
- Awarded the "Outstanding Imported Manufacturer Certificate" by the Bureau of International Trade, Ministry of Economic Affairs.
- Obtained ISO 50001:2011 Energy Management System certification.
- Obtained ISO 9001:2015 Quality Management System certification.



Financial Performance

Facing the impacts caused by increasing ethylene glycol (EG) production capacity and shutdown inspection of oil refinery facilities, EG price drop, raw material price hike, reduced profit margin, etc., OUCC EG production line still manages to maintain a balance between profit and loss. Two departments, i.e., specialty products and gas, generate a record high revenues and earnings thanks to the implementation of high-value and green products strategies.

OUCC has also been focusing on improving basic competitiveness and transforming high-valued products as its main operating principles. With the relentless efforts of all our colleagues in 2021, OUCC gained an operating income of NT\$14,673,731 thousand, increasing 50% compared to 2020. The net profits before tax was NT\$1,089,532 thousand; the net profits after tax was NT\$899,758 thousand. With the approval from the Board of Directors, cash dividends NT\$ 0.7 per share is to be distributed.

Unit: NT\$ Thousand

	2019	2020	2021
Operating income	11,762,636	9,798,912	14,673,731
Operating cost	10,951,780	9,015,310	12,620,091
Staff salaries and benefits	472,726	406,712	503,147
Dividend paid to shareholders	1,549,981	265,711	0
Dividend paid to government	206,228	45,369	61,028
Community Investment	1,768	1,590	3,755
Economic value retained	(1,419,847)	64,220	1,485,710
Total debt	11,023,437	10,608,706	10,359,750
Total asset	24,547,442	22,712,675	23,232,530

Note: 1. The information from the above form is obtained from unconsolidated financial reports.
2. Please refer to 2021 Annual Report p.81 for annual net sale and sale volume.
3. Please refer to 2021 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:

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

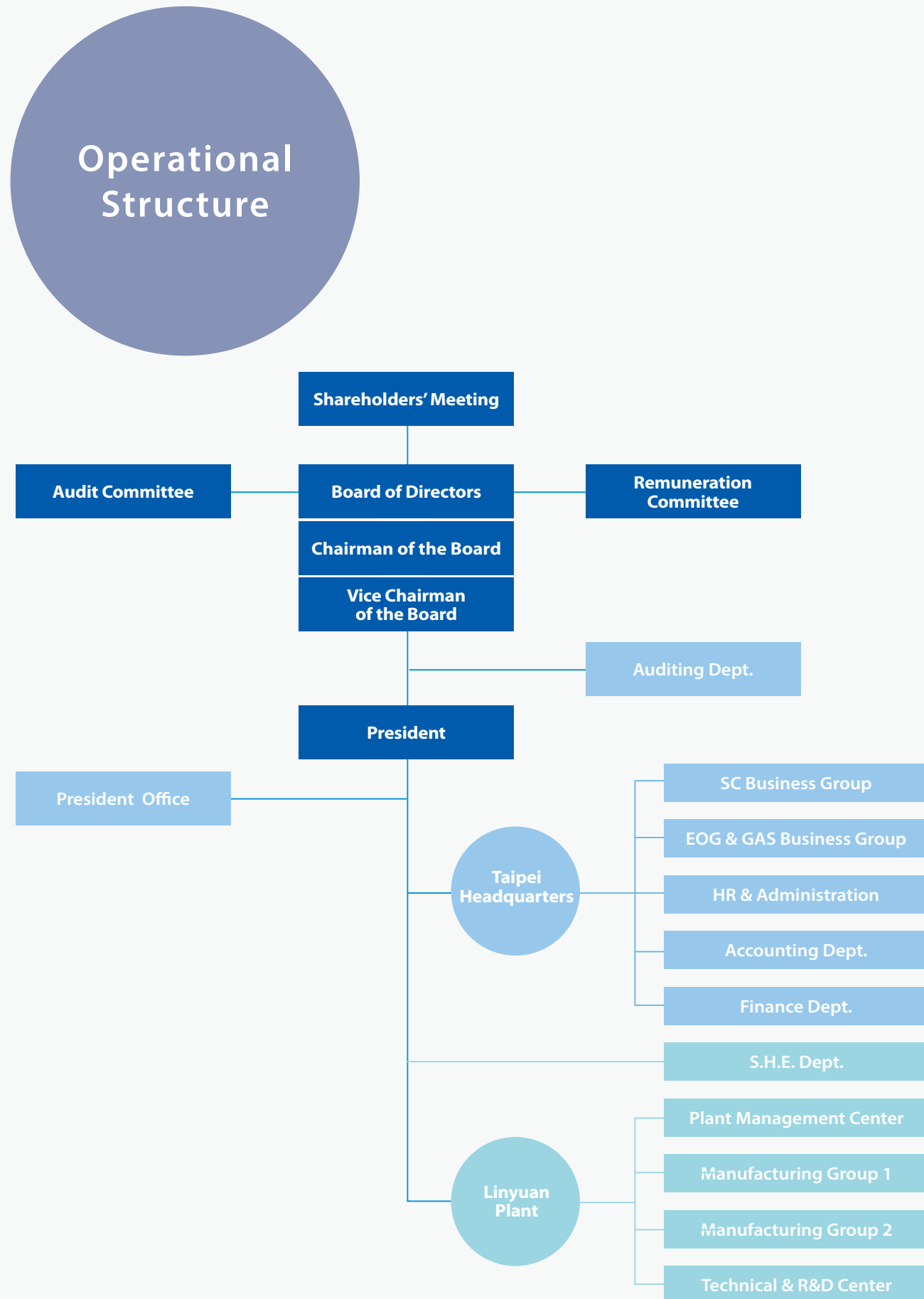
- Company website: <https://www.oucc.com.tw>
- MOPS: <https://mops.twse.com.tw/mops/web/index>



Company website MOPS

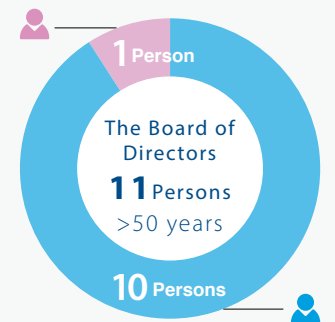
Stakeholder	Contact	Communication Channels
 Shareholders and Investors	Spokesman and Investor Relations Vice President of OUCC Sales Division	02-2719-3333
	Deputy Spokesman Assistant VP of OUCC HR & Administration	02-2719-3333
	Stock Services Oriental Securities Corporation	02-7753-1699
 Employees	Ms. Chen	02-2719-3333#281
 Suppliers/Contractors	Mr. Hsu	02-2719-3333#282
 Business Clients	Mr. Chen	02-2719-3333#331





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, and lay a solid foundation of OUCC's sustainable management.



Skills and diversification	<ul style="list-style-type: none"> The term of office of the Board of Directors is three years. The candidate nomination system has been adopted for the nomination and election of members. Education and experience of the candidates are evaluated, ensuring diversity, independence and the opinions of the stakeholders be overall considered. All the Board members have sufficient management, decision-making leadership and related industry knowledge, with education and experience in legal, finance, economics, sales, etc.
Performance appraisal	<ul style="list-style-type: none"> Board of directors' performance assessment was conducted by a third-party organization in 2021. OUCC Board of Directors was rated Advanced, Benchmarking in the metrics of structure, members, process and information, respectively.
Board of Director's meetings	<ul style="list-style-type: none"> A total of six Board of Directors meetings were held to set management objectives for corporate sustainability management and strategies.
Professional training seminars	<ul style="list-style-type: none"> Directors and Independent Directors of OUCC participate in external education and training courses on topics for corporate governance on a regular basis, which included the "Operational Practices of the Board of Directors and Corporate Governance Seminar," "Operational Practices of the Audit Committee," and the like in 2021. Please refer to page 48-49 of the 2021 Annual Report.
Major Results	<ol style="list-style-type: none"> 1. Approved the Board of Directors election of the new term. 2. Approved the plan of Linyuan Plant's investment on semiconductor-grade CO₂ product line and plant construction. 3. Approved the modifications to Corporate Sustainability Development Policy. Please refer to page 42-43 of the 2021 Annual Report.



Remuneration Link to ESG Indicators

A Remuneration Committee has been established to determine and review the performance and remuneration of the Directors, and the management on a regular basis. Two meetings were held during 2021, with an attendance rate of 100%. The Remuneration Committee is mainly responsible for assisting the Board of Directors in setting up compensation policies and systems, and to review the performance appraisals of Directors and Managers.

The OUCG procedures for setting the remuneration of Directors is based on the "Procedure for the Board of Directors' Performance Appraisal," which evaluates the operating performance, potential operating risks in the industry, ESG project executive performance and results, and sustainable operation strategies and goals. The company will decide reasonable compensation with reference to individual performance, achievement rate, and contributions to the company. The Remuneration Committee and the Board of Directors review relevant performance appraisal and the reasonableness of the compensation, and the remuneration system is reviewed when necessary according to the actual operating conditions and relevant laws and regulations in order to reach a balance between corporate sustainability and risk control.

The remuneration of Directors as well as bonuses for employees are set in accordance with the annual operating performance of the Company. Additional proceeds are distributed depending on overall operating performance, taking into account a market salary survey made by a professional management consulting firm, an investigation related to the industry salary levels and those of listed companies, and the overall financial risk of the business environment.

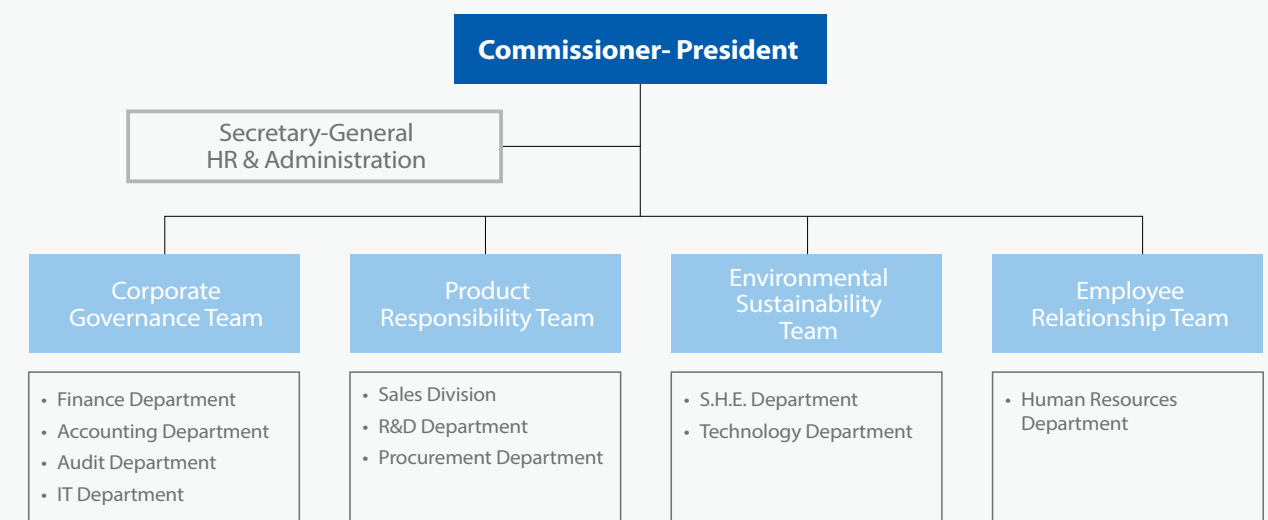
The operations and financial arrangements of the OUCG are independent from those of affiliated companies, with whom all relevant interactions are handled in accordance with the "Regulations Governing the Transactions of Related Parties," "Procedures for the Acquisition and Disposal of Assets," "Procedures for the Capital Lending to Others," "Procedures for Endorsement and Guarantee," and other relevant provisions. A risk control mechanism and a computer firewall have been properly set up.

Sustainability Committee

In order to effectively coordinate and manage various ESG affairs, OUCG 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 Secretary-General, HR & Administration, is accountable for the organization and promotion of the task execution of each department, and report periodically to the Board of such progression status.

The head of the department, Assistant Vice-President or Senior Manager, is appointed to the ESG Committee. Top management is responsible for the operation of the committee and formulation of ESG relevant policies, action plans, and cross-departmental coordination. In principle, the ESG Committee holds regular meetings as well as extraordinary meetings for any specific ESG issue that requires an immediate response. All the management processes, results of assessments and general ESG information are communicated to stakeholders through the company ESG website.

ESG Committee Organizational Structure



OUCG Received the 2021 "Taiwan Corporate Sustainability Award"

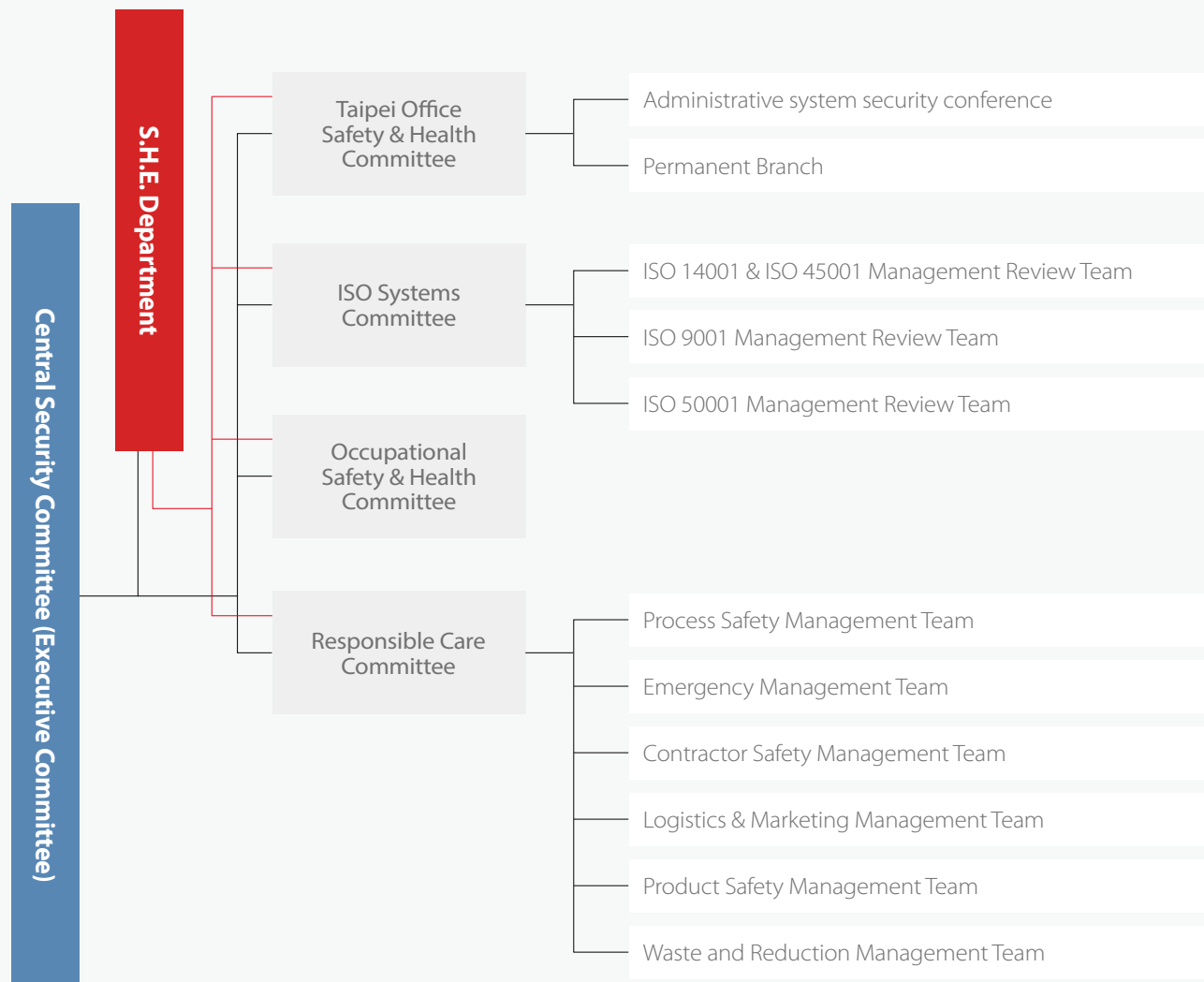
With the effective implementation of sustainable actions and enhanced information disclosure, OUCG was recognized and rewarded the TCSA Taiwan Corporate Sustainability Award in 2021.



Risk Management



OUCC manages to strengthen its Risk Management Organizations. Each unit has a committee responsible for conducting systematic evaluations and analysis on critical operational issues and major risks. Related management systems are introduced and are complemented with comprehensive risk strategy planning and actions to ensure a balance between operational practices and risks, laying the solid foundation for sustainable development.



Asset Risk Responsive Measures

- 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.



Accounts Receivable Risk Responsive Measures

- In order to control an appropriate amount of working capital and minimize the occurrence of property damage, 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.

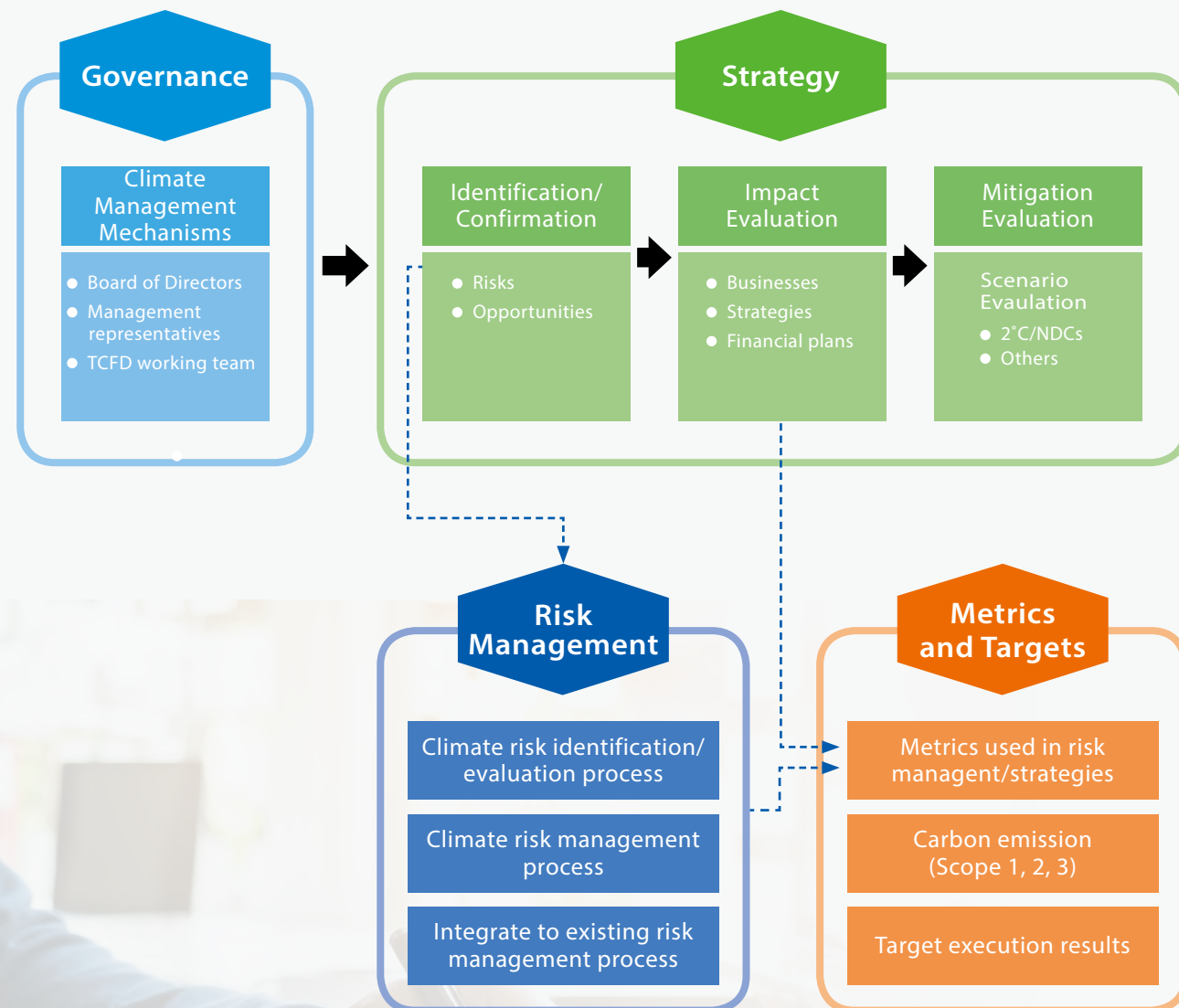
Interest Rate Risk Responsive Measures

- To reduce the risks arising from changes in interest rates, 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.

Assess and Respond to Climate Change Risk

OUCC adopted the "Recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD)" framework in 2021 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 OUCC, and develop countermeasures to reduce the potential impact of climate change risks on our operations.

OUCC follows TCFD to formulate the management and control mechanism as follows:



Governance

Board of Directors

The Board of Directors has realized the importance of climate change issues. In addition to daily operations, which include the development of a sustainable environment as governance policy, the management team reports to the Board of Directors on climate-related issues such as greenhouse gas emissions, energy consumption, and water consumption on a quarterly basis. The Board of Directors also supports the promotion of climate change-related issues, such as the annual budget, the setting business goals, as well as the monitoring of important capital expenditure and other climate risk assessments including water and power resource risks. The management team holds discussions and reviews all the relevant risks and opportunities at the annual ESG committee meeting. The findings are reported to the Board of Directors for the evaluation of corporate social responsibility performance.

Management representatives

- The Environmental Sustainability Team was set up under the ESG Committee to assess the risks and opportunities arising from related climate issues through the company's risk management process.
- In 2008, an cross-departmental "Energy Saving and Carbon Reduction Committee" was established, and chaired by Chief Manager of Linyuan Plant to set targets for electricity saving, greenhouse gas reduction and water resources management, and to plan and implement various energy saving and carbon reduction measures. Regular task meetings are held quarterly to track the progress and the effectiveness of energy conservation and carbon reduction measures, and review the regulation trends and policy announcements on energy conservation and emission reduction, so as to evaluate and plan accordingly.

Strategy

Identification/Confirmation

Impact Evaluation

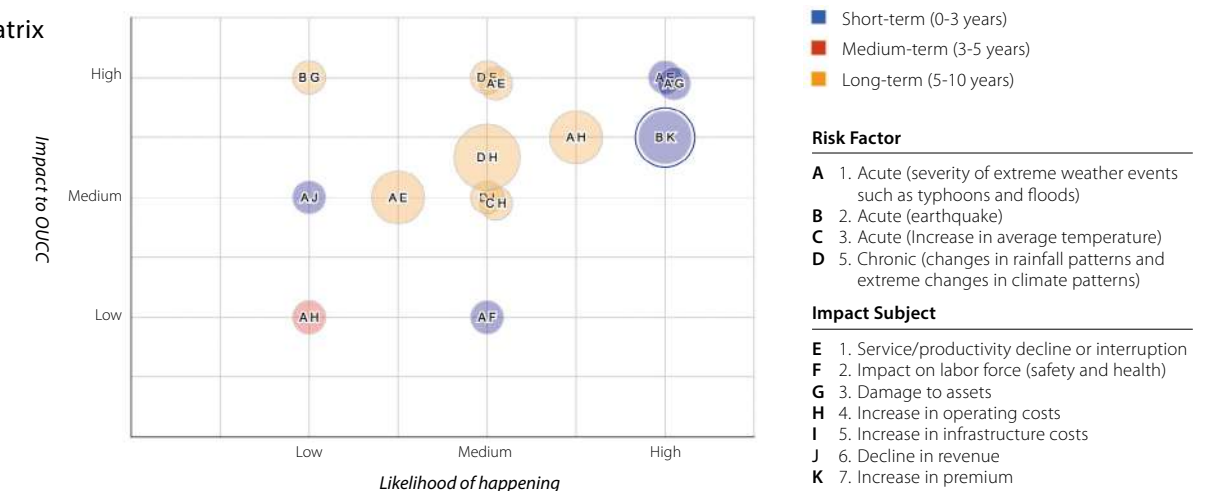
Mitigation Evaluation

- According to the existing target milestone, the assessment and analysis of the risks and opportunities related to climate change are divided into short-term (2022), mid-term (till 2027) and long-term (after 2028).
- Evaluate the potential operational and financial impact to the company in relation to the identified major risks and opportunities.
- Four strategies have been formulated based on long-term management goals: "Choose highly selective catalysts," "Improve energy efficiency," "Use renewable energy," and "Introduce low-carbon fuels."

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



Metrics and Targets

Metrics used in risk management/strategies

Carbon emission (Scope 1, 2, 3)

Target execution results

Scope 1 and Scope 2 emissions have been verified in accordance with the "ISO 14064-1 Standard," and external verification has also been conducted. Scope 3 emission inventory has commenced in 2021.

5 indicators of climate strategies:

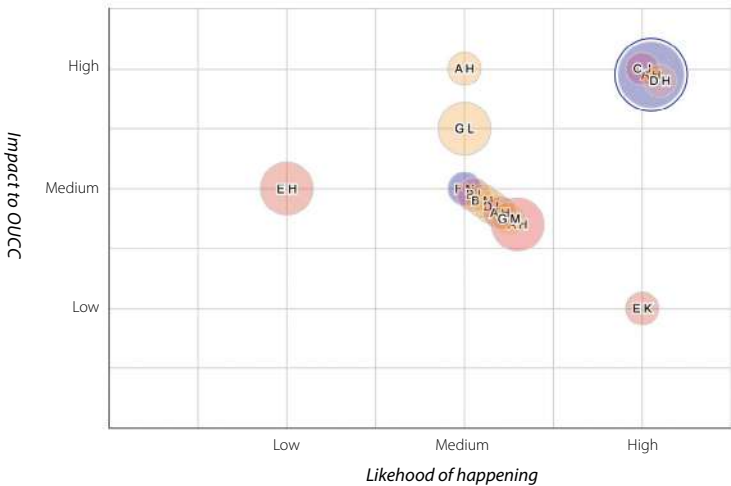
- 1 Reduction of power consumption per product
- 2 Reduction of greenhouse gas emissions per product
- 3 A gradual expansion in the use of renewable energy as the market supply and demand is mature
- 4 Increase the cumulation of total power savings
- 5 Minimization of climate damage disaster to avoid production interruption

KPI:

- 1% annual average power saving rate
- 1% annual average greenhouse gas reduction
- 2% reduction in yearly water saving as long-term target
- Set up the self-supplying renewable energy power generation equipment
- Purchase green power and certification, evaluate the setup of energy storage equipment
- Continue to plan and promote energy-saving carbon-reducing projects, evaluate the construction of high-efficiency low-carbon heat & power cogeneration system



Trasitional Risk Matrix



- Short-term (0-3 years)
- Medium-term (3-5 years)
- Long-term (5-10 years)

Risk Factor

- A 1. Policy and regulation (carbon tax increase)
- B 5. Technology (low carbon products and services)
- C 6. Technology (failure to invest in new technologies)
- D 7. Technology (low carbon technology transition costs)
- E 8. Market (changes in customer behavior)
- F 9. Market (unstable market information)
- G 10. Market (increase in raw material costs)

Impact Subject

- H 1. Policies and regulations (increase in operating costs)
- I 5. Technology (low carbon technology R&D expenditures)
- J 6. Technology (capital investment)
- K 7. Technology (new equipment and process costs)
- L 9. Market (increase in energy resource costs)
- M 10. Markets (increase in processing costs)
- N 11. Market (change in revenue mix and sources)

Risk Management

Climate risk identification/evaluation process

- An assessment of the impact on company operations was conducted in accordance with the "Questionnaire on the Impact of Climate Change on the Manufacturing Industry" by the Industrial Development Bureau, Ministry of Economic Affairs. This addressed extreme climate issues such as "flooding," "water shortage," "high temperature" and "power shortage."
- Follow the TCFD framework to identify climate risks and opportunities and to formulate countermeasures that are to be confirmed by senior executives.

Climate risk management process

The ESG Environmental Sustainability Team and the "Energy Saving and Carbon Reduction Committee" conduct systematic assessment and analysis of climate change issues. Countermeasures and action plans are then formulated to reduce the impact on company operations.

Integrate to existing risk management process

The ESG Environmental Sustainability Team and the "Energy Saving and Carbon Reduction Committee" track climate change-related risks, and report the results of their assessment and analysis to senior executives, who take measures according to the degree of risks.



Anti-corruption management

To strengthen corporate integrity and prevent business misconducts, OUCC establishes its Codes of Conduct to regulate the business conducts of the Directors, managers and employees. The acts without good faith, unlawful actions or breach of fiduciary duty are prohibited.

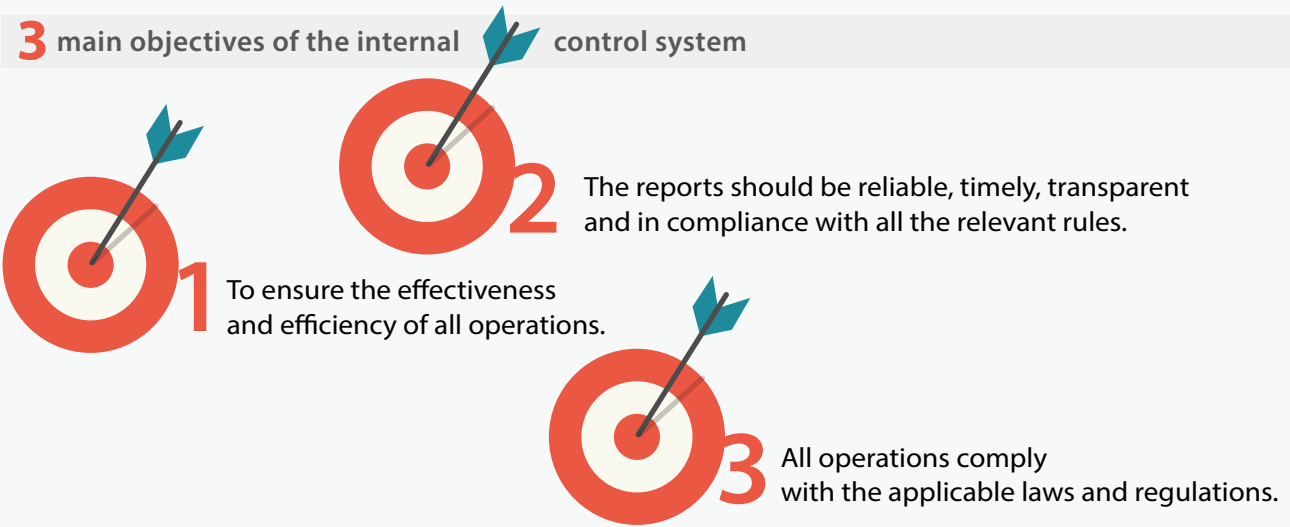
OUCC posts the above policies and regulations on the company’s website to communicate with the relevant stakeholders. If there is any violation of the above regulations, the relevant punishment pursuant to the law shall follow. OUCC has multiple communication channels for stakeholders to report the relevant wrongful acts. Should any violation of the regulations for ethical corporate management, it could be reported to the aforementioned channels, under the full protection of the “Whistle-blowing” mechanism.

Management Policies	"Best Practice Principles" "Codes of Conduct" "Meeting Rules of Board of Directors" "Procedures for Handling Material Inside Information" "Whistle-blowing System and Discipline Measures against Violation of the Codes of Ethics and Best Practice Principles"
Communication and Advocacy	Relevant management policies and information are published on the company website to communicate with all relevant stakeholders. Official website: https://www.oucc.com.tw/en/governance-73-page85
Education and Training	Internal management meetings are held regularly for the education and training of all employees. In 2021, all employees completed ethical management education and training.
Supervision Mechanism	The company has assigned a dedicated department responsible for reporting the implementation of best practice policies to the Board of Directors on a regular basis.
Report Channel	In-person reporting, telephone reporting, letter reporting.
Management Result	No corruption incident occurred in 2021.



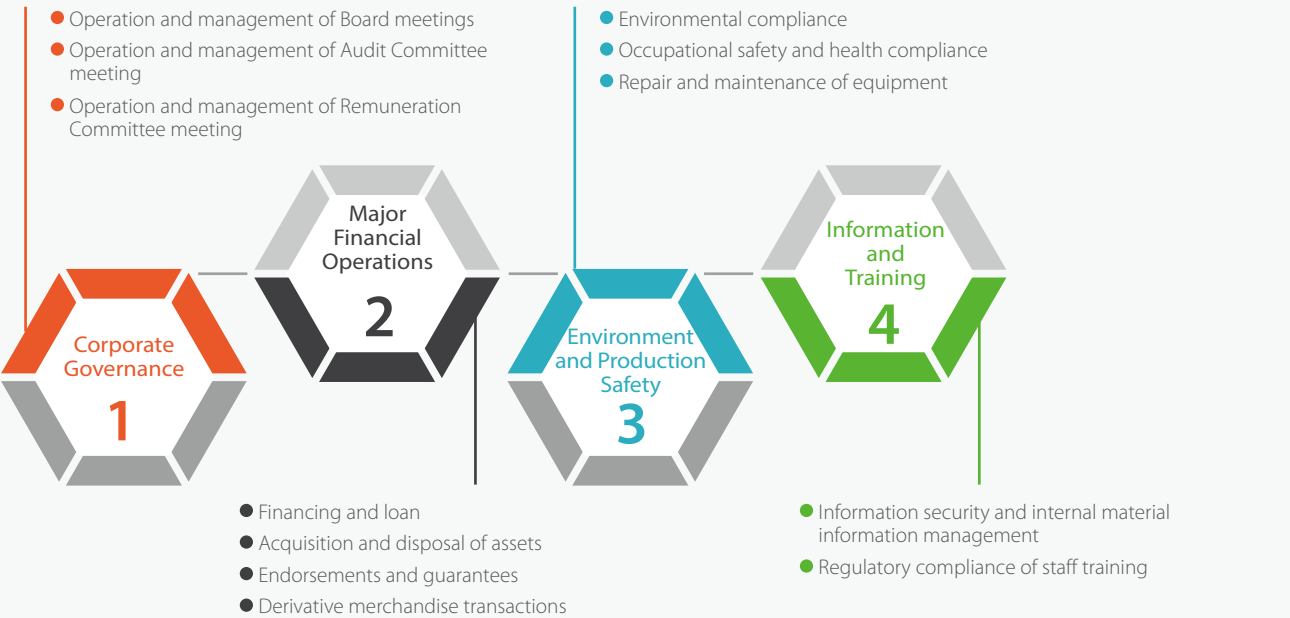
Sound Internal Control System

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 2021 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 company operations and information disclosure met the expectations of all the stakeholders.

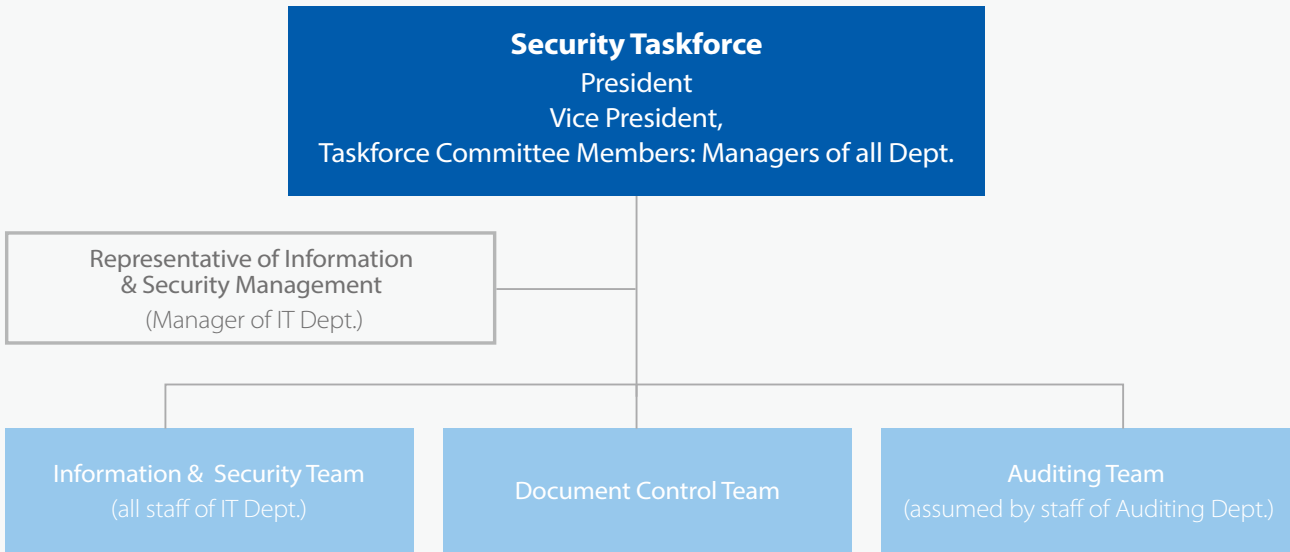


Information Security Risk Management

To safeguard the information from the impact of unendurable risks, OUCC adopts the concept of Business Continuity Planning (BCP) to regulate the information management mechanism, and establish the systematic analysis and information security management guidelines.




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.

 <div>Risk Assessment</div>	<ul style="list-style-type: none">● 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.
 <div>Risk Transfer</div>	<ul style="list-style-type: none">● Multiple security defenses: these include firewalls, an enterprise VPN and remote access, encryption, intrusion detection & prevention, and anti-spyware software.● Application of an authorization mechanism: a user must fill in the online application form before obtaining the authorization upon the completion of the electronic procedure.● Management of hardware devices: OUCC is equipped with uninterruptible power supplies and has inspections of safety control facilities carried out regularly.● Data transmission Lines set up between Taipei Office and Linyuan Plant: An 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.● Two-tier identity authentication was employed using SSL VPN encrypted connections to reduce the risk of hacker attacks when the application system is logged in from the outside.● 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.● 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.● 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.
 <div>Emergency Response</div>	<ul style="list-style-type: none">● 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.
 <div>Maintenance Audits</div>	<ul style="list-style-type: none">● Electronic Administration Operations: OUCC has established a comprehensive electronic documentation system, and has set up an administrative process control and electronic mechanism, reduces unnecessary resource consumption.● File security control and maintenance: maintenance for fire and moisture protection of hardware and media devices.● 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.



3. Action Program

To further strengthen security and allay concern, a safer two-tier authentication mechanism was implemented for external personnel login from outside for business purposes in 2021. 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 personal data and internal information is retained when sending information to the website through the reliable connection between the two sides. SSL certificates are utilized to protect the data, so that they cannot be accessed when sending between the server and browser in order to avoid being monitored by others.

Strategy	Goal	Program	Description
Risk Transfer	Enhance system defense mechanisms	 Upgrade computer firewall and antivirus software	<ul style="list-style-type: none"> 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. OUCG upgrades anti-virus 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.
	Enhance login security	 Remote login terminal two-tier authentication mechanism	<ul style="list-style-type: none"> Before introduction: if the account and password of remote users were stolen, then the illegal entrance may get direct access to the information. 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.
Emergency Response	Enhance resilience	 Establishment of a remote backup mechanism	<ul style="list-style-type: none"> The establishment of a comprehensive remote backup mechanism which consists of a total of four backup processes to enable information from OUCG head office and Kaohsiung Linyuan plant to be simultaneously backed up into two alternative storage locations.
	Confidentiality	 Cookie Policy Statement	<ul style="list-style-type: none"> In compliance with GDPR requirements for personal data protection, the company incorporates a "Cookies Policy Statement (Data Confidentiality Policy)" to its official website. Establish information security policies to secure customer information and intellectual property rights.
		 Keyword Detection	<ul style="list-style-type: none"> 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



Managing Employees' Privately Owned PCs

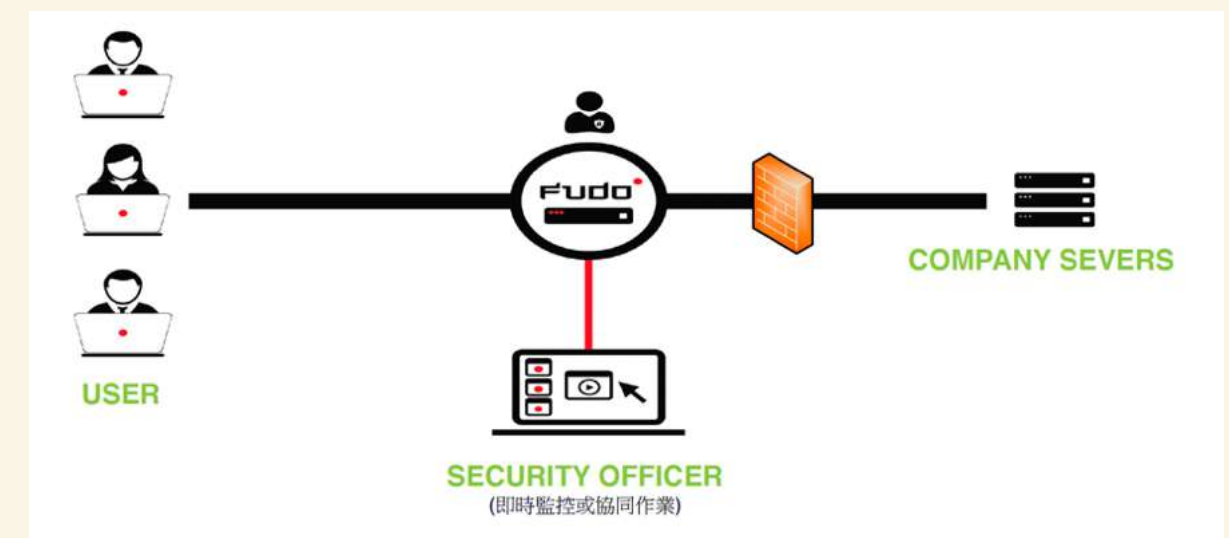
The following measures are adopted to manage the employees' privately owned computers at workplace:

- 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, OUCG uses a Privilege Access Management (PAM) system to avoid credential theft and the threats caused by privilege abuse.

To manage the user accounts of the systems, 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.



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, the government and competent authorities, etc. With substantial analysis, stakeholders' concerned issues are identified, and relevant performance and improvement are disclosed in the Report.

By maintaining communication and discussions with multiple stakeholders, actively listening and responding to employees, investors, suppliers and community residents, OUCC implements ESG expectations and serves as an important reference for improving ESG performance and sustainable innovation and growth.



Stakeholders' Communication Channels

Stakeholder	Meaning for OUCC	The Main Communication Channel and Frequency	Concerned Issues	GRI Material Topic
Shareholders and Investors	The shareholders and investors are OUCC's stockholders, to whom we must be responsible.	<ol style="list-style-type: none"> 1. Shareholders' meeting (annually) 2. Investors conference (quarterly) 3. Annual report (annually) 4. Corporate investors' forum (occasionally) 5. Spokesman hotline and mailbox (occasionally) 6. The company website (permanent) 7. MOPS (permanent) 	<ul style="list-style-type: none"> • Corporate Governance • Industry Trends • Economic Performance • Risk Management • Dividend Policy 	<ul style="list-style-type: none"> • Economic Performance • Emissions • Environmental Compliance
Employees	The employees are the foundation to OUCC's sustainable operation, and the driving force of our continuous growth.	<ol style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> • Employee Welfare • Work Environment • Labor Rights 	<ul style="list-style-type: none"> • Economic Performance • Employment • Labor/Management Relation • Occupational Health and Safety
Corporate Customers	Satisfied customers are the key to the development of our business and services.	<ol style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> • Industry Trend • Emission • Customer Privacy • Law and Regulation Compliance • Occupational Health and Safety 	<ul style="list-style-type: none"> • Economic Performance • Emissions • Environmental Compliance • Occupational Health and Safety
Suppliers / Contractors	We have a number of products and service chains, all of which are dependent on the support from suppliers and contractors.	<ol style="list-style-type: none"> 1. Supplier periodical evaluation (annually) 2. The ESG website and report (annually) 3. Transportation meeting (occasionally) 4. Supplier/Contractor safety meeting (monthly) 	<ul style="list-style-type: none"> • Supply Chain Sustainability Development • Water Resource Management • Waste Management • Occupational Health and Safety Management 	<ul style="list-style-type: none"> • Emissions • Energy • Water and Effluents • Waste • Occupational Health and Safety
Local Community	As a good neighbor of the local community, we are committed to protecting the environment ideal for dwellings.	<ol style="list-style-type: none"> 1. Charity donations (occasionally) 2. Event sponsorship (occasionally) 3. Telephone contact (occasionally) 4. The ESG website and report (annually) 	<ul style="list-style-type: none"> • Environmental Pollution Management • Toxic Substance Management • Environmental Compliance 	<ul style="list-style-type: none"> • Emissions • Water and Effluents • Environmental Compliance
Government Agency / Non-government Organization	All of our products, services and operation activities abide by the inspection and supervision of governmental and non-governmental agencies.	<ol style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> • Law and Regulation Compliance • Energy • Award Engagement 	<ul style="list-style-type: none"> • Energy • Emissions • Environmental Compliance • Occupational Health and Safety

Material Topics Determination and Boundaries

In 2021, we have identified 9 major themes and developed corresponding strategies and actions in response to the concerns of stakeholders, which are detailed in each chapter and the management approach of material topics may be referred to on page 141.

Process for Determining Material Topics

Step 1		Compile the international guidelines, benchmarks and related industrial information, as well as OUCC's ESG related performance in 2021 before the ESG sustainability meeting is summoned.	Sustainability, Completeness
Step 2		Communicate through external related parties; evaluate major concerned issues of the external related parties.	Stakeholder Inclusiveness
Step 3		Conduct ESG interview meetings and issue questionnaires to the interested parties (include employees) to investigate potential impacts within and outside the organization.	Stakeholder Inclusiveness
Step 4		With the above evaluations, we collaborate with the professional judgment of all units, and combine with industrial considerations and the importance of issues as well as GRI guidance recommendations to develop OUCC's ESG matrix for 2021, with 9 material topics.	Magnitude, Sustainability

Material Topics Matrix

Concern	High		<ul style="list-style-type: none">Water and EffluentsEmpolymntLabor/Management Relation	<ul style="list-style-type: none">Economic PerformanceEnvironmental Compliance
	Moderate		<ul style="list-style-type: none">EnergyOccupational Health and SafetyWaste	<ul style="list-style-type: none">Emissions
	Low			
		Low	Moderate	High
Impact				

- **Economy:** Economic Performance
- **Environment:** Energy, Water and Effluents, Emission, Waste, Environmental Compliance
- **Society:** Employment, Labor/Management Relation ,Occupational Health & Safety

Material Topics Boundaries

● Direct impact

▲ Indirect impact

■ Impact due to business relationship

Material Topics	Meaning and Importance to OUCC	Upstream	OUCC	Downstream			SDGs	Management Approach (page)
		Raw Material Supplier (CPC)		Transport Contractor	Local Communities	Corporate Client		
Economy								
Economic Performance	Stable economic development is the foundation of business operations as well as sustainable development.	■	●	●		■	<div>8</div> <div>Decent Work and Economic Growth</div> <div></div>	36-40
Environment								
Energy	Appropriate energy management can reduce operating costs and risks.		●			■	<div>7</div> <div>Affordable and Clean Energy</div> <div></div>	92-96
Water and Effluents	Effective Water resource management through recycling system could enhance the sustainability of the plant resources.		●		▲		<div>6</div> <div>Clean Water and Sanitation</div> <div></div>	98-101
Emissions	The promotion and control of climate change strategy help develop sustainability.		●		▲	■	<div>11</div> <div>Sustainable Cities and Communities</div> <div></div>	90-91, 97
Waste	Strengthen the control and management of effluent and waste, to reduce the impact on the environment.		●				<div>12</div> <div>Responsible Consumption and Production</div> <div></div>	104-106
Environmental Compliance	Strict compliance to environmental protection regulations is OUCC's pledge to the environment.	▲	●	●	▲	■	<div>13</div> <div>Climate Action</div> <div></div>	107
Society								
Employment	Employees are the most important assets of OUCC. Attending to the need and voices of employees' to increase employee trust and strengthen centripetal force.		●				<div>3</div> <div>Good Health and Well-being</div> <div></div>	62-76
Labor/Management Relation			●				<div>5</div> <div>Gender Equality</div> <div></div>	
Occupational Health and Safety	Construct a safe workplace environment, protect employees, and avoid potential costs and risks.	■	●	●		■	<div>8</div> <div>Decent Work and Economic Growth</div> <div></div>	113-134

Note: 1. With OUCC as the internal entity, local communities, suppliers, transport contractors and corporate customers as external entities.
2. The threshold values for the major themes: X-axis and Y-axis rankings are both above 2.6 points (out of 3.0).

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
Petrochemical Industry Association of Taiwan (PIAT)	Director, Member
Taiwan Chemical Industry Association (TCIA)	Director, Member
Taiwan Responsible Care Association (TRCA)	Director, Member
Taiwan Institute of Chemical Engineers	Member
Taiwan Industry Gas Association (TIGA)	Director, Member
Industrial Gas Association of R.O.C	Member
Industrial Safety and Health Association (ISHA) of the R.O.C	Member
Kaohsiung Chamber Of Industry	Member
Chinese Arbitration Association, Taipei	Member
Chinese National Association of Industry and Commerce, Taiwan (CNAIC)	Member

Justin Tsai, President of OUCC, appointed as the 9th term of TRCA Chairperson



The President of OUCC, Justin Tsai, has been serving in the chemical industry in Taiwan for a long time, with significant contributions to the development of the chemical industry. He is elected as the President of the Taiwan Responsible Care Association (TRCA), and his term lasts till 2021.

In the future, OUCC and the member companies will work together to share the green chemicals and technical experiences, continuing the improvement of overall environmental health and safety of the chemical industry, as well as collaborating with communities to contribute to the sustainable development of the environment and economy in Taiwan.



<https://www.oucc.com.tw/csr-97-page428>



SINCERE AND DILIGENT PARTNER

Human-centered OUCC treats its employees as the company's most valuable assets. OUCC endeavors to create a safe and healthy workplace and to provide better wages and benefits so that the employees can work resting assured.

OUCC pledges to defend the workers' rights, comply with labor standards and treat each employee fairly. OUCC also offers proper workplace facilities (both software and hardware) and employee welfare so that the employees can 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.



Solid Partnerships

- Employee benefits expenditures totaled NT\$**98.875** million
- Employee average compensation was NT\$**1.061** million

Satisfied Customer

- A customer satisfaction survey scored **33.3** 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 **973**
- **100**% of freight forwarders passed the evaluation 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.

Equal Employment Rights

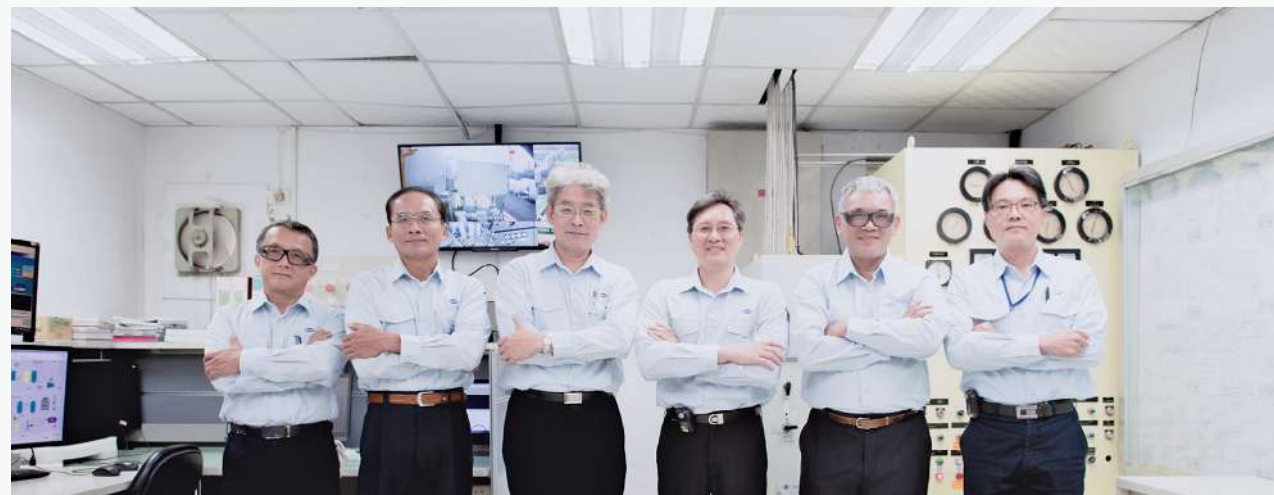
To safeguard the labor rights of the employees, our staff management system is based firmly on the equipped techniques and capability of the employees. There is no discrimination based on gender, religion, nationality, or ethnicity with respect to employment, salary, performance evaluation, promotion, 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 2021, the total number of OUCC employees in Linyuan is 285. There are 87 people registered in Linyuan, with the proportion of local employment reaching 31%, which showcases the support and encouragement of OUCC in terms of employment of local talents.



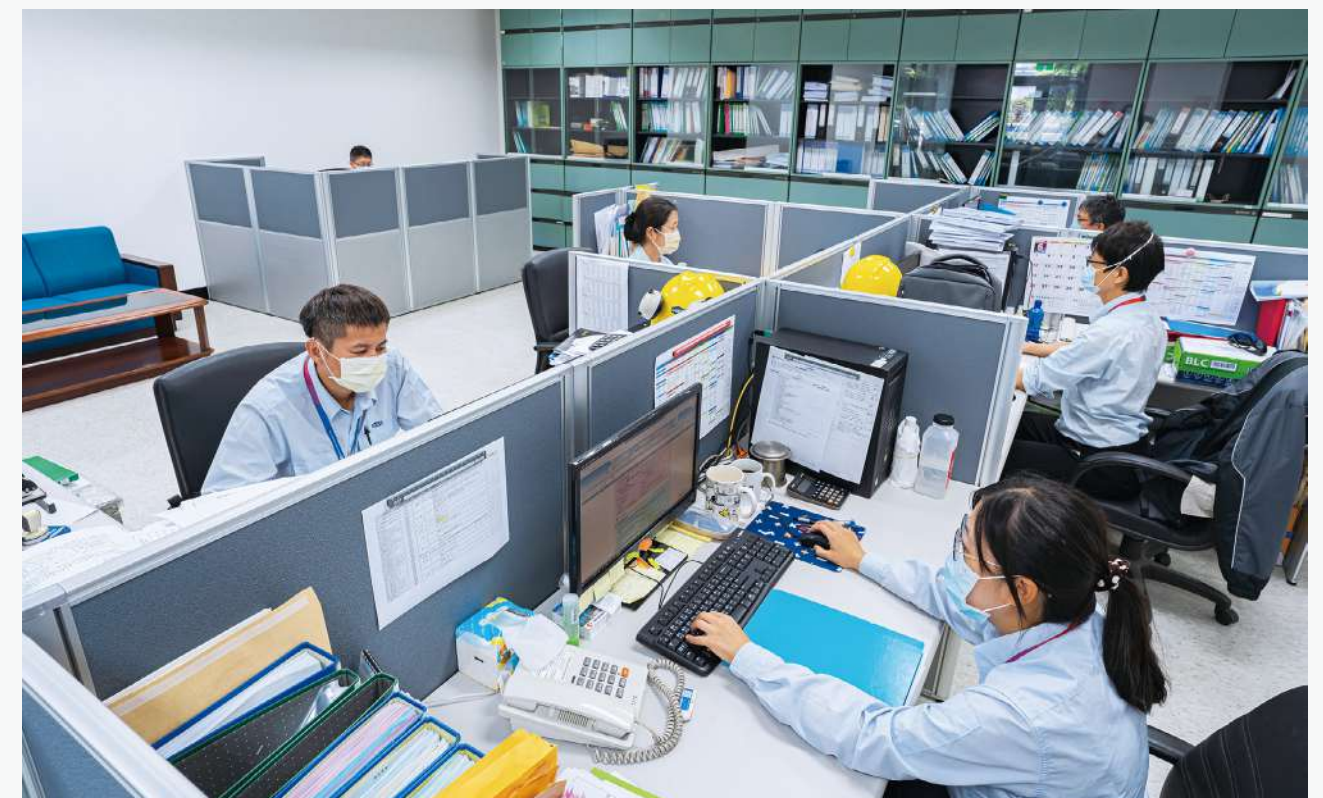
Percentage of Local Residents at Linyuan Plant

Job title	Local Residents	
	Linyuan	%
Engineer / Administrator and above	11	3.86%
Operation-Foreman	14	4.91%
Operation-Operator	62	21.75%
total	87	30.53%

Note: 1. In terms of nationality, OUCC hires 98.5% 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





In addition to local staff, OUCC employs three Indonesians, one Chinese and one 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 employees to acquire admission to the additional group insurance, jointly established by the company and the employee welfare committee, which supplements basic business insurance. The company helps 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.



OUCC Employee

OUCC employees are all full-time (unscheduled 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 2021, the total number of OUCC employees is 329, 293 male employees (89%) and 36 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.

Category	Age	2021			
		Person		%	
					
General Staff	<29	20	6	6.08%	1.82%
	30~50	179	18	54.41%	5.47%
	>50	43	6	13.07%	1.82%
Middle Management	<29	0	0	0.00%	0.00%
	30~50	19	2	5.78%	0.61%
	>50	23	1	6.99%	0.30%
Senior Management	<29	0	0	0.00%	0.00%
	30~50	0	0	0.00%	0.00%
	>50	9	3	2.74%	0.91%
DL	<29	5	0	1.52%	0.00%
	30~50	61	0	18.54%	0.00%
	>50	6	0	1.82%	0.00%
IDL	<29	15	6	4.56%	1.82%
	30~50	139	20	42.25%	6.08%
	>50	67	10	20.36%	3.04%

Note: 1. "Direct personnel" refers to plant shift employees. "Indirect personnel" refers to plant non-shift employees, and mid-level management and up. Both are included in the "Permanent contract" employees.
2. Definition of employee: General employee-grade 8 and down, mid-level management-grade 5-7, senior management-grade 4 and up.















New Recruits

Age	2019				2020				2021			
	Person		%		Person		%		Person		%	
												
≤29	4	2	1.09%	0.55%	10	1	2.93%	0.29%	12	2	3.65%	0.61%
30~50	9	0	2.46%	0.00%	10	1	2.93%	0.29%	11	2	3.34%	0.61%
>50	2	0	0.55%	0.00%	1	0	0.29%	0.00%	2	0	0.61%	0.00%

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

Employee Turnovere

Age	2019				2020				2021			
	Person		%		Person		%		Person		%	
												
≤29	0	0	0.00%	0.00%	5	0	1.47%	0.00%	6	2	1.82%	0.61%
30~50	13	1	3.55%	0.00%	21	2	6.16%	0.59%	22	4	6.69%	1.22%
>50	9	2	2.46%	0.01%	21	2	6.16%	0.59%	6	1	1.82%	0.30%

Note: % = Number of employees resigning (includes retirement but not the involuntary leave)/ total number of employees of the year

Manpower Diversity

	2019	2020	2021
Aboriginal employee	1	1	1
Disabled employee	2	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 2021, the differential subsidy have 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 benign communication 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 various internal meetings, employee seminar and timely manner, to establish effectively the concordant relationships, as well as a good working environment.

2021 Employee Seminar in Linyuan

Type	Times	Person	Participation rate
Communication with labor union representatives	6	35	64.8%
New-employee seminar	1	18	81.8%

 Labor Union	<ul style="list-style-type: none"> The OUCC Union was established in 1988 to protect the interests of members. Group agreement has been approved in 1995. Union members constitute 68% of the employees in 2021. 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	<ul style="list-style-type: none"> 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 problem. 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.
 Internal Meeting	<ul style="list-style-type: none"> Pursuant to the group 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 2021.
 Employee Seminar	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> OUCC labor representatives account for 46% of the Occupational Safety and Health Committee. All health and safety issues are regulated by the “Occupational Safety & Health Committee.”
 Timely Manner	Human Resources Dept. <ul style="list-style-type: none"> Taipei Office: (02)2719-3333 Linyuan Plant: (07)641-3101

2021 Important Labor Resolutions

In 2021, OUCC reached consensus with the employees on matters relating to ESG resolutions through labor meeting discussions:

- 1 In March 2020, the fuel/material saving reward program was resumed. The valid timeline of the reward traced back to the start of the year.
- 2 The company offers full-pay sick leave to the employees suffering from discomfort caused by COVID-19 vaccination.
- 3 The company adopts numerous measures to boost the employees’ confidence in performance evaluation and pay adjustment, including increasing salary level, special pay raise for low-paid workers, narrowing the pay gap between the same positions/levels, and setting explicit principles for performance evaluation and pay adjustment.
- 4 Guidelines on subsidization for professional employee licenses are made public to all employees.
- 5 A practice of caring for the employees on sick leave is added to the Work Rules to facilitate better management.



Human Rights Protection

OUCC actively adheres to the core spirit of the "Universal Declaration of Human Rights," the "ILO Declaration," the "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 Policy of OUCC

OUCC abides by government laws and regulations, supports international human rights convention, and in full compliance with the "United Nations Universal Declaration of Human Rights" and the "Declaration of Fundamental Principles and Rights at Work" of the International Labor Organization. Human rights-related policies have been formulated and implemented to prohibit any form of coercion or forced labor, discrimination, or the use of child labor.

OUCC values the labor rights of employees, and is committed to creating a healthy and safe work environment with gender equality, and plans more extensive development and training for employees. A positive workplace atmosphere has been established and can be maintained by the improvement of welfare. An excellent work environment and organizational culture allows employees to find a balance between work and free time.



In order to mitigate human rights risks and raise employees' awareness of workforce human rights, OUCC has included human rights issues in its safety and health training. In 2021, human rights-related training was conducted quarterly, including gender-friendly care and labor rights, with a total of 225 participants and 112.5 hours of training.

Besides, relevant regulations in the document system are explained and made 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."

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 record and the declaration for complying the company rules and regulations and also those of personnel management, as well as the commitment for non-disclosure of the company business confidentiality. The document content is published within the company and is available for examination and reference by all employees.

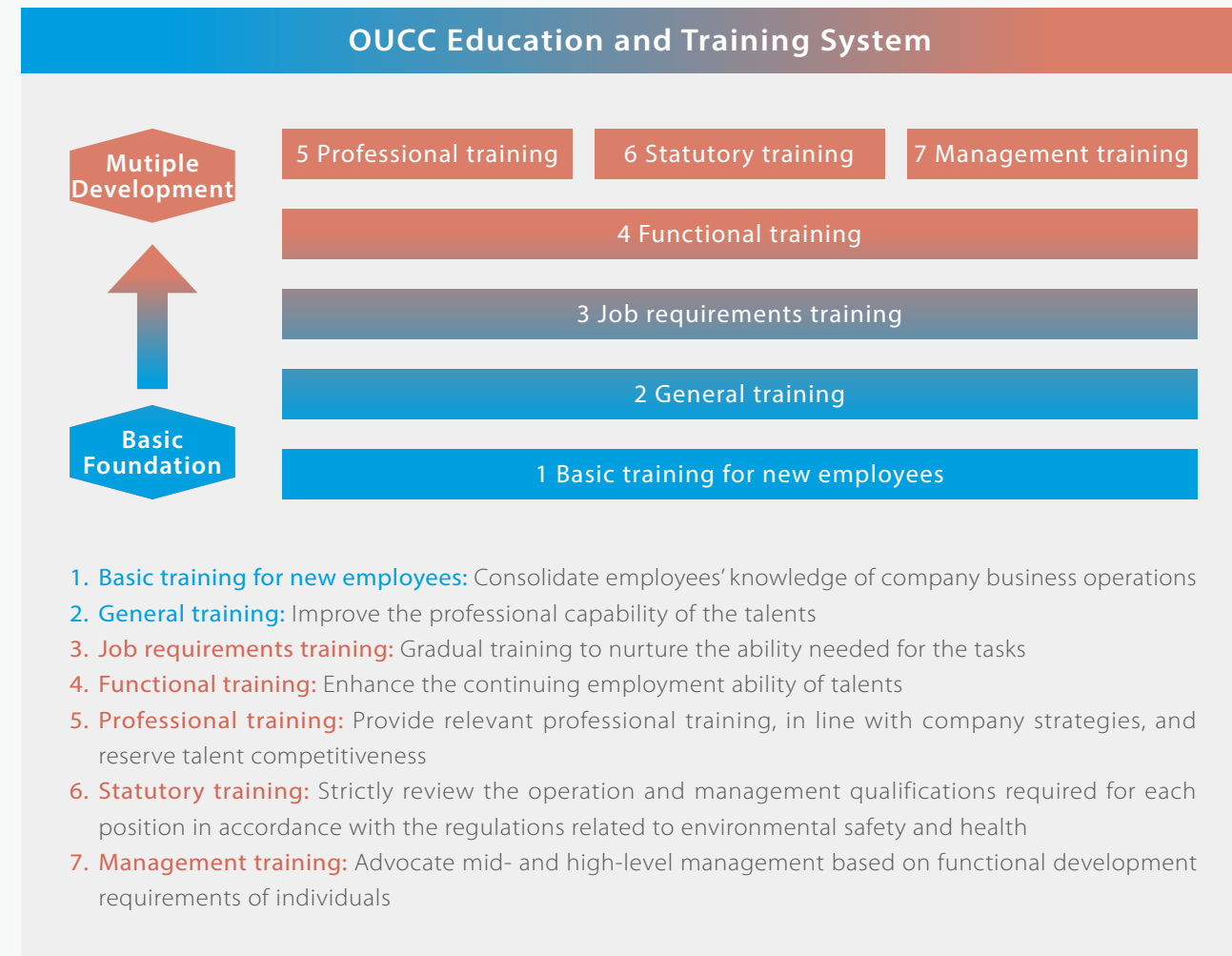


Human Protection Mechanism

 Fair employment	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> The "Act of Gender Equality in Employment and Sexual Harassment Prevention, Grievance, and Discipline" and "Mechanism for Handling Complaints 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Abide strictly by the "Rules Governing Employee Grievance" and establish a smooth grievance channel. Stakeholders may file for appeal through the "Anti-corruption mailbox" on OUCC's official website. There were no complaints in terms of human rights in 2021.

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.



Employee Training Hours

Unit: hours

Type of Employee	Gender	2019		2020		2021	
		Hour	Average	Hour	Average	Hour	Average
General Staff – Direct Labor	Male	4,549	26.60	1,979.50	25.38	2,650.50	36.81
	Female	21.5	21.50	-	-	-	-
General Staff – Indirect Labor	Male	3,443	31.02	6,549.50	36.19	3,822.75	22.49
	Female	867.5	26.29	937.00	28.39	587.00	19.57
Mid-Level Management	Male	967	26.14	1,013.50	27.39	1,001.25	23.84
	Female	29	9.67	36.50	18.25	56.50	18.83
Senior Management	Male	306	43.71	65.00	9.29	107.50	11.94
	Female	1	0.33	22.50	7.50	23.00	7.67
All Employee	Male	9,265.3	28.42	9,607.50	31.71	7,582.00	25.88
	Female	919	22.98	996.00	26.21	666.50	18.51

Note: 1. Definition of employee: General employee-grade 8 and up, mid-level management-grade 5-7, senior management-grade 4 and down.
2. Average hours in training: Total hours of training for the employee category / Total number of employees in the category

Training Overview

Type	Item	Unit	2019	2020	2021
Total employee training hours	Total	hr	10,184	10,603.5	8,248.5
	Average	hr	27.83	31.1	25.07
Total employee training amount	Total	NT\$ million	1.24	0.91	0.676
	Average	NT\$	3,390	2,654	2,055
	The proportion in the current year's total revenue	%	0.0105%	0.0092%	0.0046%
	Total Revenue	NT\$ thousand	11,762,636	9,798,912	14,673,731
	Total number of employees	Person	366	341	329

Note: 1. Total revenue is calculated by individual revenue statistics.
2. Average employee training hours = Total employee training hours / Total employee
3. Average employee training amount = Total employee training amount / Total employee
4. The proportion of training cost 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 2021. 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. This had an impact on new graduates and youngsters with little experience in the seeking of employment.

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

Comprehensive industry foundations training, work safety training, core general knowledge courses, as well as various professional on-the-job 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. Course adjustments can then be made to actualize the goal of practical learning.

Throughout this Program, 17 young people aged under 29 were hired, and results were outstanding in both training and work performance, and a total of 15 legal licenses were obtained.

The AI Program for High-level Managers

Digital transformation is gradually becoming a trend. Companies are using artificial intelligence (AI) and big data to analyze their accumulated data, and this has become an important company tool. In 2019, as a response to this trend and to allow big data to take root, it was arranged that the high-level managers in OUCC would attend AI programs at the Taiwan AI Academy, hoping that they would take the lead to make OUCC more competitive as a whole.

Nine managers attended the Taiwan AI Academy programs till 2021. The training courses were three months long, and a fee of nearly NT\$50,000 was paid for each participant. The training was completely subsidized by the company and the total cost of the training was NT\$432,000. OUCC considered this to be an excellent investment and placed high value on the training of personnel.

Campus Recruitment - Adding New Blood

In 2021, OUCC participated in the job fairs held for the graduates at the prominent schools in north, central and south Taiwan. In addition to the efforts to improve its brand image through ESG programs, OUCC also manages to reverse the stereotypes of chemical industry with its trustworthy system and sustainability practices.

In 2021, OUCC took part in only two job fairs held at National Taipei University of Technology and National Sun Yat-sen University due to the pandemic. With the positive effect the fairs generated, a number of graduates of prominent schools or their friends as referrals applied for OUCC positions. **OUCC hired its R&D staff through this channel for the first time in 2021.**

Industry Academia Collaboration - Learning from Each Other

In the form of industry academia collaboration, OUCC provides internships to the students from the schools located near its operation sites. Those upper-class students in the Department of Chemical Engineering are able to familiarize themselves with the industry from this experience.

In 2021, OUCC adopted a proactive **"Approach and Invite"** strategy for recruitment. Contacts with the professors of the chemistry related departments of schools are made. Local schools are reached and the professors and students are invited 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 a better understanding of how to practice what they have learned in advance. OUCC senior executives are also arranged to answer questions from the students. The network of industry academia collaboration is henceforth established gradually.

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" 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

- Electronic-grade Products training program: As the company's product lines are expanding every year and the industries of our clients are becoming more diversified, electronic-grade customers will be one of our key future targets. To ensure our employees have all the relevant knowledge, the product introduction and application are delivered in the courses to enhance the employees' level of professional know-how, so to prepare them for the target customers in the next phase.
- Artificial Intelligence training program: The program has been initiated, and arrangements have been made for managers of each department to attend. This aims for them to understand how AI and big data work, and lay a solid foundation for the upcoming digital transformation.

Regular Performance Evaluation

The OUCC has clear specifications for employee performance evaluation and employee incentive & discipline. To maintain both equity and employee development, managers at all levels will discuss daily performance with the staff during the evaluation period. The performance appraisal and evaluation mechanism is carried out in two stages. Direct managers account for 70% of variance in employee performance evaluation, and managers at higher-levels account for 30% of variance. The 2021 annual performance evaluation was a 100% all-employee operation. Operator-level colleagues, employees at respective level, as well as management level were all evaluated.

Besides, the OUCC has formulated the “Rules Governing the Payroll” as a reference for determining personnel remuneration and salary increases. To keep the salary competitive to attract and retain the talented candidate or personnel, the Company studies proactively the industry pay levels and review regularly of its remuneration policy. The department managers will make final adjustments for interest sharing when the Company is profitable in the current fiscal year.

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 have implemented an employee retirement plan in full compliance with the “Labor Standards Law” and “Labor Pension Act”, which secure the pensions of all employees, ensuring the certain quality of life after retirement.

The Pension Reserve Committee is set up according to the Law and a pension reserve is appropriated in an amount equivalent to 10% of the total monthly salary in accordance with

the employee retirement plan and deposited in a trust fund account at the Bank of Taiwan as per government regulations. Pension Reserve Committee meetings are held periodically to review pension appropriation and implementation in order to secure the interests of the employees. In 2021, NT\$60.331 million was deposited into the special account for retirement. By the end of 2021, the sum of labor retirement reserve account reached a total of NT\$107.722 million. OUCC abides by the provisions of the Labor Standards Act and evaluates the retirement reserve every year, ensuring that it is sufficient to support the pension payments for all the potential retirees.

In addition, for those employees who have chosen the Labor Pension Act, an amount equivalent to 6% of the monthly salary respectively for each employee is deposited in a personal account with the Bureau of Labor Insurance to safeguard the interests of the employees.

We support our employees and help them to 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.

List of OUCC's Pension Plan

OUCC's total value of payable pensions	NT\$338,204 thousand
Percentage of retirement fund set aside by the company	10%
Percentage estimation basis	Actuary report
Time of evaluation (annual)	2021
The response strategy while the existing retirement fund being insufficient to pay its debts	Pay from company account
Level of participation in retirement plan	All Employee

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, and 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 can live a more colorful and worry-free life after retirement.

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 complete and comprehensive benefit. The employee benefits expenses totaled more than NT\$98 million in 2021 with welfare subsidy of more than NT\$25.5 million.

In 2021, the average salary of OUCC's new employees was 1.66 times the minimum wage in Taiwan (1.56 and 1,76 times for males and females, respectively.) In addition to paying a salary above local minimum wage, pay raise is also offered based on the results of annual performance evaluation. The company is willing to share the profits with its employees.

Basic salary ratio with Taiwan		
Taiwan : OUCC	1:1.56	1:1.76

Full-time Employee Benefits for Non-supervisory Positions

Item	Unit	2020	2021	Compared to the previous year
Number of full-time employees	Person	328	314	-4%
Average salary	NT\$	0.919 million	1.06 million	+15%
Median salary	NT\$	0.86 million	0.981 million	+14%

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.

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, and monetary gifts for three public festivals, and 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.

The OUCC Employee Benefits Expenses

Type	2019	2020	2021
Pensions	23,309,854	21,700,882	19,766,617
Insurance expenses	33,873,999	30,659,324	32,056,952
Employee (profit) recompense	457,197	0	16,724,265
Special bonuses	6,633,163	0	19,482,688
Shuttle bus	9,606,843	9,169,059	9,562,050
Employee health checkup	1,604,675	1,170,607	1,282,618
Total	75,485,731	62,699,872	98,875,170

Note: Employee benefits 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, but exclude education and training, protective equipment, and staff costs or expenses directly related to the job.

The 2021 Welfare Measures List

Unit:NT\$			
Welfare Measure	Description	Subsidy Amount	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	12,000	12
Hospitalization subsidy	Staff hospitalization subsidy, NT\$1,000 / time	12,000	12
Staff travel subsidy	Full subsidy for each employee	0	0
	Lineal family members, NT\$1,600 / person (maximum 3 people)		
Self-reliant tour	Self-reliant tourism and academic events	16,809,800	367
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	17,000	47
Birthday celebration subsidy	Staff birthday celebration, NT\$2,000 / person	666,000	333
Year-end banquet	Employee year-end dinner	0	0
Retirement Benefits Application	Employee retirement gifts	113,603	6
Funeral subsidy	Staff NT\$50,000	90,600	8
	First degree of kinship NT\$5,700 / per person		
Group insurance	Life insurance, personal accident insurance and medical insurance, hospitalization insurance	883,952	367
Festival Bonus	A festival bonus of NT\$5,000 for each of four holidays (New Year, Dragon Boat, Moon Festivals, and Labor Day)	6,929,550	367
Total		25,540,505	

Note: New Employees' welfares are provided on proportion.

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 2021.

Transportation Subsidy Amount

Unit:NT\$	
Year	Subsidy amount
2019	1,783,100
2020	1,610,400
2021	1,539,136

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 2021, due to the epidemic, most club activities are suspended to avoid group gatherings. A total of 1 club was subsidized in 2021, with a subsidy of NT\$17,000.

When a club is formed, the Director of the club files an application and a prospectus for annual club activity and a budget, a club members list, the purpose of the new club, and an introduction of the club to the Employee Welfare Committee for a 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’ difficulties and problems in application, provides customized services, promotes product development and technical innovation “guided by customers’ needs”, and builds 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 system and no incidents of leakage or infringement of customer privacy occurred in 2021.

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.

In 2021, OUCC carried out a customer satisfaction survey on EG and EO products. The average score on satisfaction was 33.3 out of 35. A satisfaction survey for gas customers was also conducted (recovery ratio 72%) and the average result was “good” out of 5 grades. These results shows that customers are satisfied with OUCC services.



Customer Satisfaction Survey (EG&EO)

	2019	2020	2021
Average score	33.1	33.3	33.3

Introduction to Customer Feedback / Comments Handling Form

To enhance customer service efficacy, OUCC has improved its “customer complaint handling procedure” through IT. 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.

Comparison	Version	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



Rigorous Quality Management

OUCC have obtained ISO 9001 certification, and we exclude the use of heavy metals such as lead and cadmium in accordance with “Restriction of Hazardous Substances Directive (RoHS).” Under a strict quality management, we win the trust of customers by the stable standards for products, and no significant quality events occurred during 2021.

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.

Remote Storage Tank Monitoring System

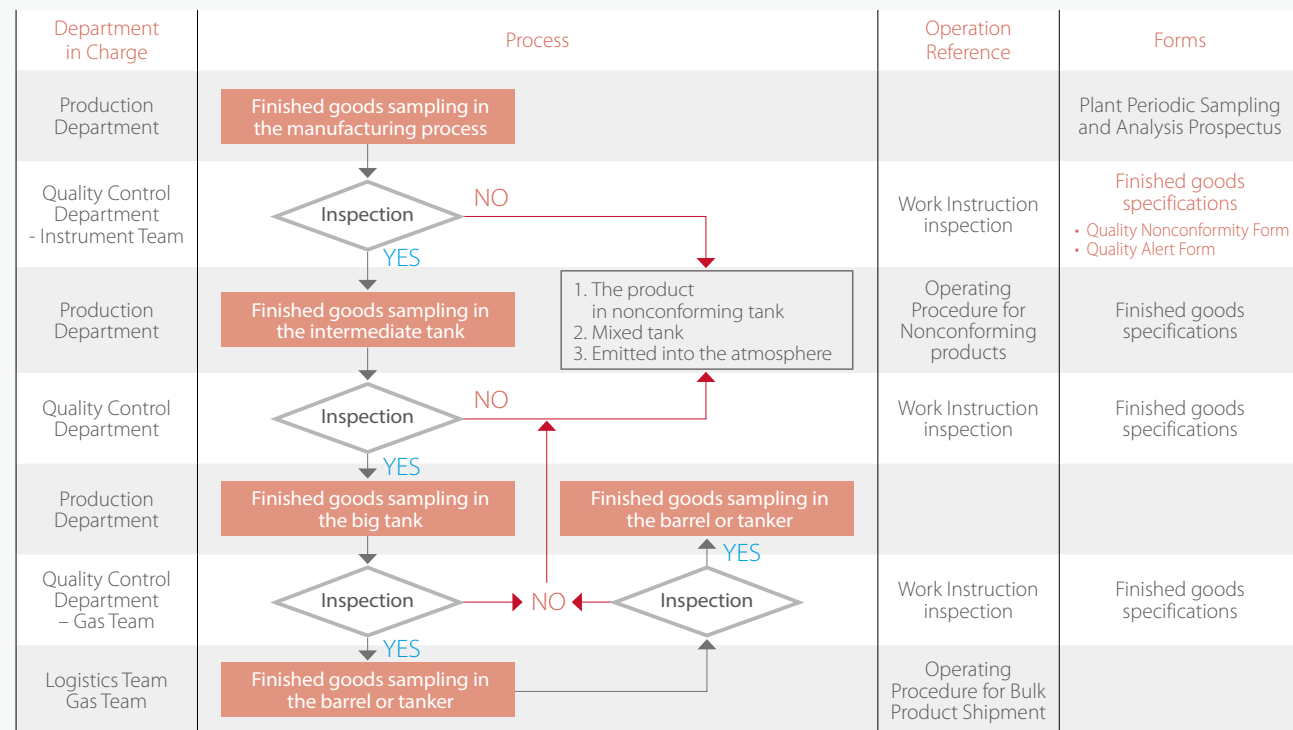
OUCC independently developed the “remote customer storage tank monitoring system,” which enables us to grasp the liquid level information of customers’ storage tanks in real time through IoT technology, so that we can properly schedule the delivery of tanker trucks and the merging of customers’ trucks to improve the efficiency of transportation scheduling.

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 (i.e. reducing carbon emissions) 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.

Implementation of Gas Tank Monitoring System Comparison

	Total numbers of deliveries	Average tons / truck
Before installation	6,652	12.75
After installation	6,049	14.02
Difference	(603)	1.27
Annual savings on delivery fees	NT\$5,052,667	



Note: “Emitted into the atmosphere” refers to Company gas plant products - nitrogen, oxygen, and argon. These are non-toxic and 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.

2021 Management Results

- 100% of suppliers followed OUCC environmental policy
- The total number of evaluation audits on suppliers was 973
- 100% of freight forwarders passed the evaluation audit

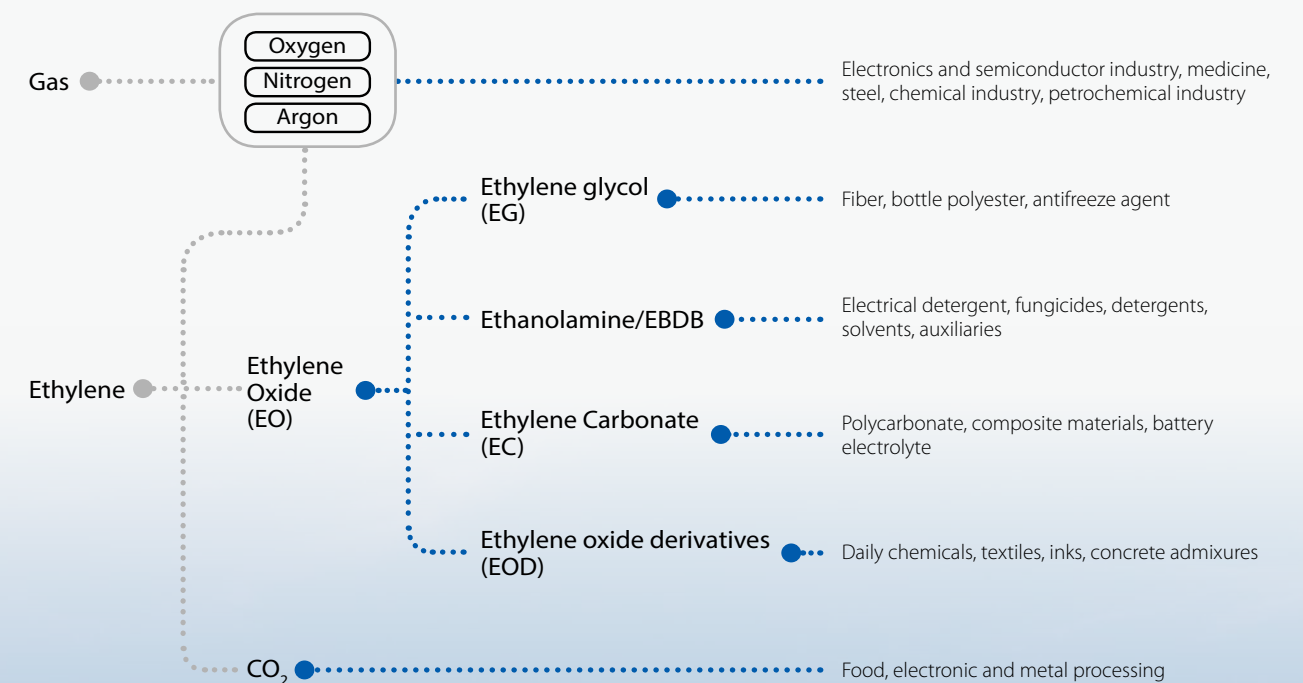
2022-2026 Short-term Targets

- 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 upstream of Taiwan's petrochemical industry chain includes crude oil, naphtha, gasoline, diesel, kerosene, fuel oil, lubricant oil, which are refined from crude oil, and the related mechanical equipments for exploration and extraction. The midstream comprises basic petrochemical raw materials produced from upstream petrochemicals by cracking, such as ethylene, propylene, butadiene, benzene, and phenol, as well as the plastics, rubbers, and artificial fibers produced from these raw materials through chemical reactions such as polymerization, esterification, and alkylation. The downstream comprises daily consumer products, such as plastic and rubber items, cleaning agents, artificial fibers, dyes, adhesives, plasticizers, pesticides and cosmetics, which are made from processed plastics, rubbers, and artificial fibers and the like, and used in a wide range of applications.

OUCC Industry Supply Chain



Material

OUCC

Downstream

<https://ic.tpex.org.tw/introduce.php?ic=N000>

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 Codes 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.

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 Management Mechanism	2021 Supplier Implementation Ratio (%)
Contractors are required to sign the "Contractor's Operation Safety Commitment to OUCC while Working in the Plant" indicating their full understanding of the rules for working on OUCC plant premises.	100%
New suppliers have been required to sign the "Suppliers' Corporate Social Responsibility Commitments," which is composed of three main aspects including employee and human rights, environmental protection, and ethical management. In 2021, a total of 105 new suppliers signed the commitment.	100%
Contractors must sign an agreement to the conditions set out in the "Environmental Safety and Health Policy Handbook" and fulfill a commitment to safety, health and the promotion of environmental protection together with OUCC.	100%

Note: 2021 Supplier Implementation Ratio = number of suppliers who signed the commitment in 2021 / total number of suppliers in 2021

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 included company management, quality, delivery time, price, service, and environmental safety. Suppliers were listed as qualified only if their rating score reached a specific standard.

Should an evaluation or material incident occur that rated disqualification and also resulted in damage to the company's reputation, labor safety, product quality, or manufacturing operation, the supplier would be listed as disqualified and suspended. In 2021, 793 trading suppliers underwent written evaluations with no one 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 high risk operation that can be hazardous. Negligence can lead to serious disaster. An accident can cause serious injury or loss of life, as well as damage to people's property and severely impair the image of the company.

OUCC continues to strengthen transportation safety and crisis management capabilities through contracts and audit mechanisms with outsourced transportation providers, and to ensure the safe transportation of chemicals. 7 forwarders who had agreed to the terms of the “Environmental Safety and Health Policy Handbook” also agreed to be audited on their commitment to environmental safety and health in 2021. The on-site audits, which were scheduled to be conducted on six tanker truck operators, were postponed due to the pandemic and completed in February 2022.

Contract Specification	Audit On-site
1. Contracted transport service providers must participate in the Kaohsiung City-Kaohsiung County-Pingtung County diesel self-management program and receive the qualification mark	1. Transport company profile and transport policy
2. Establish environmental and safety standards	2. Security system and policy
3. A regular “Outsourcing Transportation Safety and Health Quality Audit and Survey” is performed for all the main transport service providers. The transport service provider will not be renewed if the evaluation score is below standard	3. Work procedures and emergency response
	4. Driver qualification (employment / training)
	5. Driver qualification review (evaluation)
	6. Equipment safety
	7. Vehicle management

2021 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 2021. Currently, there are 6 contracted tanker forwarders in total, with the obtainment of the international system as follows:

International management system	Number of contracted tanker forwarders	Obtainment Rate (%)	Freight Delivery Ratio(%)
ISO 9001	6	100%	97.4%
ISO 14001	4	66.6%	74.5%
ISO 45001 / OHSAS 18001	6	100%	97.4%

Note: Freight Delivery Ratio = transaction amount of contracted tanker with introduction of international management system in 2021 / total transaction amount of all contracted tankers in 2021

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 their 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.



Enhance Safety Promotion

"Contractor Work Safety Rules" have been formulated to ensure the safety of personnel and equipment in the plant area. 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 industrial safety certificates 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 main points, etc., and conduct co-experience sharing of the OUCC supervision and contractor management, which would be followed by the extemporary motions for problems discovered and improvements review to ensure the safety of the workplace. In the 2021 safety meetings, the issues promulgated by the Environmental Safety unit were:

- ① COVID-19 pandemic control measures
- ② The advocacy event of hazard prevention and safety and health awareness for plant overhaul
- ③ Case studies for the accidents and incidents occurring in neighboring factories of the industrial park
- ④ Training for industrial park communication network and online notification system for confined space work by Labor Inspection department
- ⑤ Bi-weekly safety meeting for contractors and on-site supervisors



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 2021, local procurement amounted to NT\$1.5 billion, accounting for 95%(Note 2), which effectively promoted economic development in Taiwan.

Note: 1. Domestic suppliers are defined as manufacturers in Taiwan.
2. The purchase amount does not include raw and auxiliary materials.
3. 2021 Percentage of procurement amount from domestic suppliers = procurement amount from domestic suppliers in 2021 / total procurement amount in 2021 x 100%

Strive for Green Procurement


OUCC's practice in green consumption starts from its procurement, which specifies the equipment procurement standards with priority over products with energy-saving and water-saving labels or other eco-friendly labels which are approved by the government. For example, the energy efficiency of electrical motors must comply with CNS14400 IE3. Green procurement ensures that the goals of power-saving, water-saving and a reduction of energy consumption are promoted. The 2021 procurement list shows the cost of the motors and equipment that complied with IE3 specifications reached NT\$7.94 million; green procurement ratio in the equipment category was 1.55%.



SOLID CONTRIBUTION

OUCC has inherited the business philosophy of “sincerity, diligence, thrift, prudence, and innovation” from the Far Eastern Group. In this challenging new era, we continue to seek innovation and changes to encounter 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 creating a future of environmental symbiosis and social integration by applying sustainable strategies through “true” attitudes and actions.



- Reduced carbon dioxide by **2,992** t-CO₂e 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 system trial and performance tests were completed in December 2020.
The actual current water consumption is around **700** tons per day,
with a wastewater recycling rate of more than **60%**
 - Established a **waste removal and transportation platform**
 - Improved waste management and control by
increasing the reuse rate of metal barrels
- 
- Donations to local charities and disadvantaged minority groups amounted to a total of NT\$**3.80** 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, improved the cycle through PDCA, kept track of energy usage status, and worked out some appropriate energy management goals, improved energy efficiency in the plant area, and reduced our greenhouse gas emissions.

OUCC Energy Policy

Abide by energy-related regulations; 100% participation in energy and CO₂ reduction

Continuously improve energy performance; enhance energy efficiency

Review energy consumption indicators; provide resources to support energy saving

Promote clean production processes; promote energy conservation to reduce costs

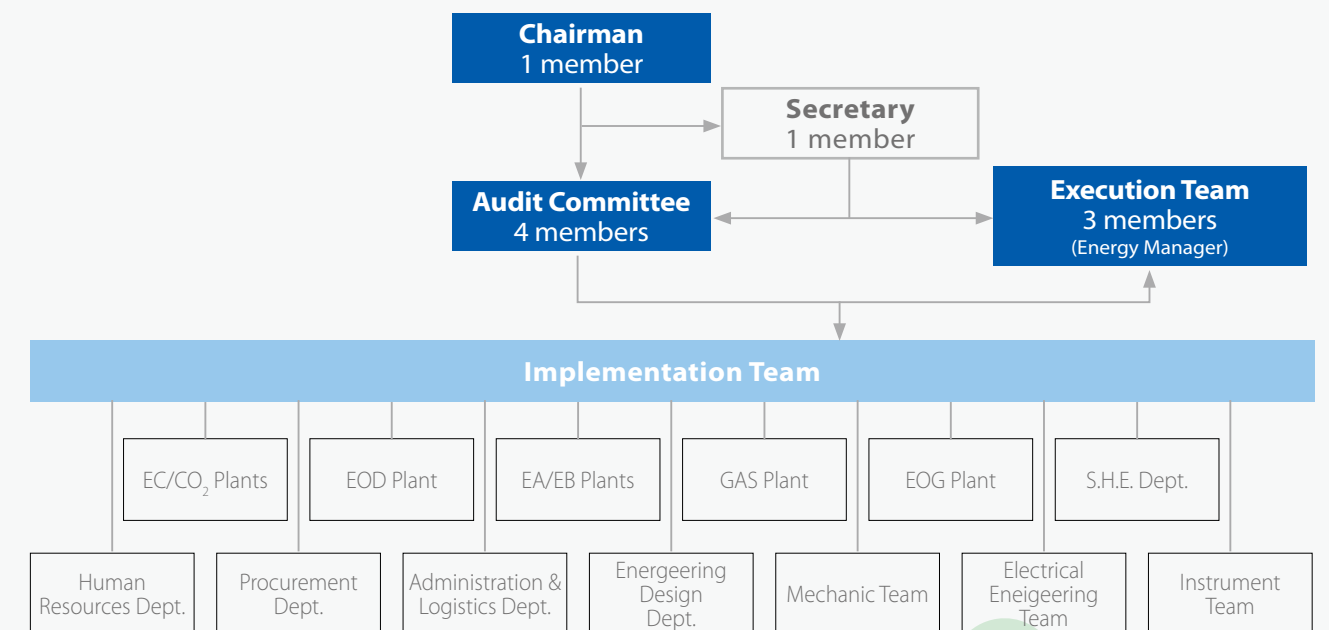
Dedicate efforts to achieve objectives and promote green enterprise development

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 mitigating global warming.

The responsibilities of Energy Saving and Carbon Reduction Committee include: reviewing energy saving and carbon reduction plans, setting annual energy saving targets, developing energy saving and carbon reduction policies, evaluating the outcomes of energy saving and carbon reduction measures, and checking the progress of energy saving and carbon reduction projects. The implementation results are presented to the President’s office for integration and analysis.

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.

Carbon Management Targets

Schedule	Target
2021 Results	<ul style="list-style-type: none"> Take 2015 as the base year, 1% reduction as the average annual target Carbon reduction approx. 2,992 t-CO₂e/year in 2021, with a target achievement rate of 0.93% 2017-2021: 5 years cumulative reduction of 83,000 t-CO₂e, of actual reduction rate 26%; the target achievement rate 100%
Short-term (2022)	<ul style="list-style-type: none"> Take 2015 as the base year, 1% reduction as the average annual target
Mid-term (until 2025)	<ul style="list-style-type: none"> Annual reduction target: 2% per year, of reduced volume 6,420 t-CO₂e / year Evaluating and planning high-efficiency, low-carbon cogeneration system, and to purchase RECs
Long-term (until 2030)	<ul style="list-style-type: none"> Emissions of 2030 reduced by 20% compared to 2015 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

Note: 2015 greenhouse gas emission: 320,946 t-CO₂e.

Greenhouse Gas Emission

	Unit	2021		
		Taipei	Linyuan	Total
Scope 1	t-CO ₂ e	2.26	40,760.1310	40,762.39
Scope 2	t-CO ₂ e	54.14	312,394.7851	312,448.93
Total emission	t-CO ₂ e	353,211.3161		
Number of employees	persons	329		
Operating income	NT\$ thousand	14,673,731		
Emission intensity	t-CO ₂ e / person	1,073.5906		
	t-CO ₂ e / NT\$ thousan	0.024		
Emission collection method	Operational control			

Note: 1. The 2021 Linyuan Plant data is verified by SGS-Taiwan and obtained ISO 14064-1:2006 and ISO 14064-1:2018 verifications.
2. The emissions of the Taipei head office were calculated by self-examination.
3. GWP is refer to IPCC (2007) global warming potential value.
4. The discharge coefficient was used as 0.502kg-CO₂e/kWh in 2020.

Emission of Value Chain

Category	Item	Emission (t-CO ₂ e)	Description
Category 3	Transportation	72,656.7351	<ul style="list-style-type: none"> Emissions caused by the transportation of raw materials Emissions caused by the transportation and distribution of the organization's products Emissions caused by employees' commute Emissions caused by business travel
Category 4	Products used by an organization	711,222.9813	<ul style="list-style-type: none"> The emissions caused by product purchase are the emissions associated with product manufacturing process. The emissions from the disposal of solid and liquid wastes depend on the type of wastes and processing methods.

Note: The 2021 Linyuan Plant data is verified by SGS-Taiwan and obtained ISO 14064-1:2018 verification.

Greenhouse Gas Emission (Taipei Head Office)

	Item	Unit	2019	2020	2021
Scope 1	Company car fuel consumption	L	1,028	1,023	997
	Company car CO ₂ emissions	t-CO ₂ e	2.33	2.32	2.26
Scope 2	Power consumption	kWh	114,829	111,012	107,842
	CO ₂ emission from power consumption	t-CO ₂ e	61.20	56.51	54.14
Total		t-CO ₂ e	63.53	58.83	56.4

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)

		Unit: t-CO ₂ e		
	Item	2019	2020	2021
	CO ₂	53,623.08	36,926.6432	37,901.5029
	CH ₄	37.72	35.6400	35.3375
	N ₂ O	4.17	3.9634	1.6390
	HFCs	2,820.87	2,821.6516	2,821.6516
Direct greenhouse gas emissions (Scope 1)		56,485.84	39,787.8982	40,760.1310

Note: 1. SF₆, PFCs, NF₃ emissions are 0 t-CO₂e.
2. 2021 Linyuan Plant's greenhouse gas emission data has passed third-party verification and obtained ISO 14064-1:2006 verification.

Energy Consumption

Item	Unit	2019	2020	2021
 Gasoline	Kilo-Liter	11.078	9.078	6.4927
	Gallon	2,926.55	2398.05	1,715.49
	GJ	361.54	296.25	211.89
 Diesel fuel	Kilo-Liter	529.28	538.64	61.65
	Gallon	139,822	142,295	16,286
	GJ	18,602	18,931	2,167
 Power	kWh	460,598,400	459,206,400	476,784,000
	GJ	1,657,344	1,652,335	1,715,583
 Steam	ton	182,743	307,376	335,072
	GJ	549,336.97	923,991.63	973,504.16
 Natural Gas	M³	-	253,021.5	557,997
	GJ	-	9,527.78	21,011.95
Total energy consumption	GJ	2,225,644.06	2,605,081.44	2,712,519.56
Energy intensity	GJ / person	6,081	7,640	8,245
	GJ / NT\$ thousand	0.19	0.27	0.18
Number of employees	persons	366	341	329
Operating income	NT\$ thousand	11,762,636	9,798,912	14,673,731

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.

Power Management Target and 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 4.155 million kWh in 2021, with a 0.86% power-saving rate.

Schedule	Target	Strategy
Short-term / Annual Plan (2022)	● The annual power saving rate of 1%	1. PP-1311A/S modification (permanent magnet energy saving project) for EOG plant 2. Air conditioners replacement project for the Maintenance and SHE offices 3. Projects of semiconductor grade CO ₂ , rooftop solar energy and program-controlled electricity distribution 4. Inlet filter replacement for the main air compressor of the second ASU 5. Outlet pipeline expansion for the seventh nitrogen generator of the gas plant
Mid-term (until 2025)	● The annual power saving rate of 1%	1. Introduction of power-saving equipment, such as frequency converters, inverter motor, and fans, etc. 2. Optimization of cooling water circulation to save electricity used by water pumps 3. OUCC has combined the management structure of the energy management system with a cloud-based “Plant Energy Monitoring System Platform,” to continuously monitor energy usage and seek for energy saving opportunities 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 5. Plans have been made for the construction of a co-gen system to reduce the use of outsourced electricity 6. Procurement of green energy and RECs, evaluation and construction of energy storage equipment 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
Long-term (until 2030)	● The annual power saving rate of 1%	1. Ongoing improvement in energy efficiency and carbon reduction management 2. Evaluation for the installation of waste heat recovery & power generation equipment

Note: The energy saving benchmark is calculated according to the announcement of the Bureau of Energy.



Actively Promote Energy Saving in The Factory

The feasibility of a high-efficiency low-carbon heat and electricity cogeneration system at the Linyuan Plant is being evaluated. We anticipate that the electricity and steam will fulfill all the requirements for production. Additionally, to comply with the “Regulations for the Management and Establishment of Renewable Energy Power Generation Equipment for Power Users Over Certain Contract Capacity,” the following proposals “set-up of a renewable energy rooftop photovoltaic system,” the “purchase of green energy and RECs,” and the “set-up of energy storage equipment” are being actively evaluated. It is hoped to achieve the legal obligation of 10% green energy in five years.

In addition, OUCC makes full use of technological advantages to promote clean processes, using a cloud based “factory 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.

2021 Energy Efficiency Improvement Results

	Energy saving project	Estimated energy consumption saved annully	Estimated annual carbon dioxide reduction (t-CO ₂ e)
EOG Plant	Equipment renewal work for K solvent circulating pumps PP-501	electricity 770,000 kWh	387
EOG control room, inspection building and research building	Addition of LiBr absorption refrigerators to replace traditional air conditioning systems	electricity 2,070,000 kWh	1,040
EOG Plant	Retrofitting natural gas burner of the coal fired furnace; using natural gas for regenerative thermal oxidizer	electricity 8,170 kWh diesel 600 kL	526
EA/EB Plant	Improvement of steam unit consumption for EA/EB factories	steam 3,515 metric tons	766
EOG Plant	Purchase of PP-202A high-efficiency motors	electricity 203,000 kWh	102
GAS Plant	Addition of X60B refrigerator to the third ASU	electricity 5,930 kWh	3
	Inlet filter replacement for the main air compressor of the second ASU (year 2021-2022)	electricity 222,000 kWh	112
	Outlet pipeline expansion for the seventh nitrogen generator in the gas plant (year 2021-2022)	electricity 112,000 kWh	56
Estimated saving electricity consumption of 4.155 million kWh (reduced steam 3,515 metric tons, diesel 600 kL), and reducing 2,992 t-CO₂e per year			

Energy Saving Improvement Results

Type	Item	Unit	2019	2020	2021
Process Improvement	Investing Amount	NT\$	12,710,000	521,612,000	100,000
	Energy Saving	GJ	26,828	14,094	10,212
Equipment Upgrade	Investing Amount	NT\$	830,000	300,000	68,370,000
	Energy Saving	GJ	870	3,048	33,302
Total	Investing Amount	NT\$	13,540,000	521,912,000	68,470,000
	Energy Saving	GJ	27,698	17,142	43,514

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 across years.

New Green Sustainable Manufacturing Processes

The coal fired furnace and Regenerative Thermal Oxidizer (RTO) at the Linyuan plant now use clean low-carbon natural gas as its fuel source, installed with highly efficient waste heat recovery equipment.

To ensure safety at the manufacturing and processing sites in the plant area, high- and low-pressure natural gas are sourced differently to supply the cogeneration system (under evaluation) as well as the furnace and Regenerative Thermal Oxidizer (RTO) systems.

Expected Benefits

- The revamped coal fired furnace and the Regenerative Thermal Oxidizers (RTO-I / RTO-II) now use natural gas instead of diesel, resulting in an estimated electricity saving of 8,169 kWh and diesel consumption decreased by 600 kL per year, as diesel powered pumps are no longer in use. The project completed in Jan. 2021.

The Paving, Rain & 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:

- 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.
- 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.
- 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, without causing the reaction area to lower its loading at the end.

Upon reconfirming the overall water distribution and heat loading of EOG, the water circulating coolers (TT-201N / TT-201) are now provided with cooling water from tower #2 (with internal isolation for inspection and repair). Both modified cooling water towers (#1 / #2) with disuse of one water pump each (450 HP and 500 HP) resulted in annual savings of approx. 6 million kWh at a cost of NT\$13.27 million, reducing the annual greenhouse gas emissions by 3,218 t-CO₂e.

Renewable Energy Strategy

- 1. Photovoltaic system:** The installation of the photovoltaic system, with capacity of 87 kWh, and an average annual power generation of more than 98,000 kWh at the Linyuan plant, is planned for self-use as well as the acquirement of the RECs.
- 2. A heat and power cogeneration system:** In response to the implementation of the government greenhouse gas reduction and energy policies in 2021, and the additional energy requirements upon completion of the new specialty chemicals plants, a high-efficiency low-carbon heat and power cogeneration system has been targeted in terms of the energy restructure in 2025.
- 3. Mid- to long-term plan:** the assessments of "Setup of renewable energy facility (rooftop photovoltaic system)," "Purchase green power and RECs," and "Setup of energy storage equipment" have been actively conducting, in the hope of completing the construction in five years, so to achieve the mandatory obligation of 10% green energy.



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-CO₂e per year.

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 bus, 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.

	Program	Description	2021 Result
Action 1	Promote video conference	<ul style="list-style-type: none"> Increase the number of video conferences to reduce the frequency of business travel between Taipei and Kaohsiung. In 2021, new multipoint video equipment were added to cloud platform services. 	<p>Videokonferences totaled 1,471 times, reduced 68.549 t-CO₂e</p>
Action 2	Encourage employee commuting	<ul style="list-style-type: none"> Continuing to promote carpooling as an approach to reduce the emissions of employee travel. Regulate the use of new-style vehicles within 5 years for transportation vehicles of suppliers, prompting 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. 	<p>① Around 128 employees took the company shuttle buses to and from work in 2021</p> <p>② It is estimated that early departure of the shuttle buses save about 50 minutes of commute time to and from the company per bus each day. Five shuttle buses save a total of about 250 minutes of commute time and reduced 380.9146 t-CO₂e each day</p>
Action 3	Enhancing the fuel efficiency of outsourced tankers	<ul style="list-style-type: none"> 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 has been effectively reduced by such measure. 	<p>① A total of 99,058 GJ of carbon emissions for outsourced transportations</p> <p>② Nine phase-3 standard compliant vehicles retired and replaced by phase-6 standard compliant vehicles. It is estimated to reduce a total of 3,028.2 GJ of carbon emissions</p>



Resources Recycling

Water Resource Management

Schedule	Target
Short-term (2022)	<ul style="list-style-type: none"> Daily water consumption reduced by 2% Daily saving 100 metric tons of water
Mid-term (until 2025)	<ul style="list-style-type: none"> Daily water consumption reduced by 20% Daily saving 1,000 metric tons of water Calculate water footprint
Long-term (until 2030)	<ul style="list-style-type: none"> Daily water consumption reduced by 50% Daily saving 2,500 metric tons of water

Note: Water consumption baseline is daily water consumption volume of 5,000 metric tons 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 waste water is discharged into the industrial sewers and pollute no water source. OUCC Linyuan Plant mainly uses the water in: public utility cooling towers of the manufacturing plants (EOG/GAS/EA/EB/EC/EOD), 85.95%; water purification system for EOG manufacturing processes, 13.7% and livelihood, 0.35%.

To cope with the risk of water shortage or floods caused by climate change, we have formulated a comprehensive water resource management plan, and have also set water resource management objectives to handle emergencies and water conservation measures in cooperation with the local government.

To protect the environment and water resources, OUCC promotes proposals for improvements in our processes and technologies and actively seek for the best water management solution to reduce water consumption. A total of NT\$68 million was invested to set up a wastewater recycling system at the Linyuan plant. Up to 1,000 tons/day can be reclaimed each day as a supplement to the cooling water tower, with a 70% highest wastewater recycling rate.

In 2021, the total amount of recycled water was 95,467 tons (approximately 286 tons/day). The recycling rate of waste water was approximately 32.45%. Also, for the willingness to use recycled water raised by the Industrial Park, OUCC agreed to use as much as 1,500 tons of recycled water per day, and with daily water use of 50% reclaimed water as goal.



Water Usage

Unit: million L

	2019	2020	2021
Linyuan Plant	2,155.088	2,076.578	2,104.758
Taipei Head Office	0.782	0.913	0.862
Total	2,155.870	2,077.491	2,105.620

Note: 1. The 2019~2021 figure is based on the water bill data.

2. In 2021, the total amount of water used by Linyuan Plant, including the water outsourced, was 9,335.03 tons.

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

Unit: megaliters

Type	Description	Statistics
Water withdrawal	Freshwater (≤1,000 mg / L Total Dissolved Solids)	2,104.758
	Other water (>1,000 mg / L Total Dissolved Solids)	0
	Total water withdrawal (note 1)	2,104.758
Water discharge	Freshwater (≤1,000 mg / L Total Dissolved Solids)	469.561
	Other water (>1,000 mg / L Total Dissolved Solids)	0
	Total water discharge (Freshwater + Other water) (note 2)	469.561
	Emission rate (%) (note 3)	22.30
Water consumption	Total water consumption (note 4)	1,635.179
	Change in water storage (note 5)	0
Water recycled / Water saving	Recycled water volume from production processes	0
	Recycled percentage from production process (%)	0
	Total recycled water volume (note 6)	430.54
	Total recycled percentage (%) (note 7)	20.46
	Number of uses of a single drop of water (note 8)	1.26

Note: 1. The total amount of water withdrawal includes the water outsourced during the drought.

2. The data of the total amount of water discharge is reported and confirmed by the Wastewater Treatment Plant of the Linyuan Industrial Park.

3. Emission rate (%) = (total water discharge / total water withdrawal) X100%

4. Total water consumption = total water withdrawal - total water discharge

5. Change in water storage volume = water storage volume in December 2021 - water storage volume in January, 2021 (if special volume changes occur in the current year, such as changes in the volume of water used due to damage to the water storage facilities.)

6. The total amount of recycled water includes recycled waste water and recycled steam condensate.

7. Total recycled percentage (%) = (Total recycled water volume / total water withdrawal) X100%

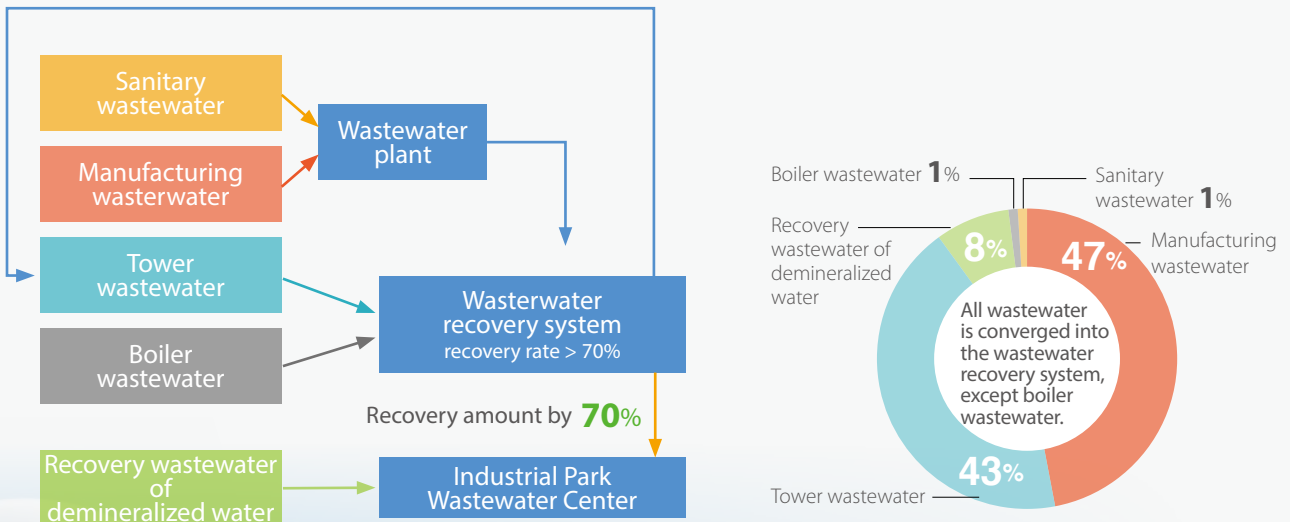
8. The number of uses of a single drop of water = (total water consumed + total recycled water) / total water consumed.



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 2021, the volume of outsourced steam totaled 335,000 metric tons, and the recycled condensate of 335,000 metric tons (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.

Measures	Description
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 of processing wastewater and cooling tower effluent, a mature membrane filtering technology of UF/RO is applied as treatment, prior to recycling for the use of 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 it is estimated that 1,000 tons per day can be recovered for use in cooling towers and pure water processes. In addition, 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 high COD. RO concentrated water is usually mixed with other low-concentration wastewater in the water recycling systems, which provides the difficult-to-dissolve organic substance the access to the water environment.

In view of the impact 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 "Procedure 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 2021.

Effluent Quality Test in 2021

Item	H1	H2
	Detected value (Unit: mg/L)	
pH (limit value: 6-9)	7.9	7.9
CHCl ₃ (limit value: 0.6)	<0.005	0.00112
COD (limit value: 90)	68.3	81.1
NH ₃ (limit value: 60)	0.22	0.05
ArOH (limit value: 1.0)	<0.02	<0.2
NO ₃ -N (limit value: 50)	17.7	11.7
Particulate Matter (limit value: 25)	10.3	17.2

Wastewater Discharge

	2019	2020	2021
The total amount of wastewater discharged m ³ / year	595,464	515,969	469,561
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 2021 was 469,561 tons, a slight decrease of 8.99% compared with 2020.
2. The amount and quality of water discharged from 2019 to 2021 meet the discharge limits, and there are no incidents that exceed the standard.

Environmental Prevention Mechanism



The chemical processes employed by OUCC and others in the same industry pollute the air during the production process. If this is not managed properly, it can cause a potential or real negative effect on local communities.

We adopt innovative technology to establish a production PI system to monitor the status of the plant operation areas. This real-time monitoring system for environmental data of the plant allows employees to monitor the operation of both production and the 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 inside air is recirculated through an activated carbon filter. Workers wear gas masks when working outside to prevent the inhalation of cumene vapor. Contact will be made with the nearby factory as soon as possible to request that corrective action be taken.



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. According 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, etc.

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		

Air Pollution Control and Prevention

Unit:Kg			
Pollutant Emission	2019	2020	2021
NO _x	2,272.05	5,739.8	6,692.00
SO _x	4,793.9	1,857.35	0
POP	NA	NA	NA
VOC	44,568	40,765	41,880
HAP	NA	NA	NA
PM	990.53	478.82	595.00

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:
NO_x: 27,975 kg / year; SO_x: 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.

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 2021. 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 control of waste and implement effective management. The system will 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

Item	Description
Identifying waste related impacts	1. OUCC production process: raw material input → reaction/production → waste generated 2. Failure to remove the sludge generated may cause the shutdown of waste water plant and further affect the production processes of the manufacturing plants 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
Impact prevention mechanisms	1. Following the SOP for in-plant waste management 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 3. Outsourcing the disposal of the waste generated in in-plant manufacturing processes to qualified operators 4. Taking recycling measures and increasing the reuse of metal barrels/plastic barrels/waste timber, sludge, etc.
Managing the waste disposal suppliers	1. Outsourcing the disposal of the waste generated during in-plant manufacturing processes to qualified operators 2. Establishing and initiating the review of new qualified waste disposal operators 3. Annual review of waste management operators 4. Reviewing the violation records of the waste disposal operators 5. Irregular inspection
Measurement and monitoring data	1. Output record of waste reporting 2. Autonomous waste inspection log

The Results of Waste Management in 2021

Unit: tons

Types of waste	Amount generated	Transfer disposal/reuse	Direct disposal
Hazardous waste	0.03	0.03	0
Non-hazardous waste	708.36	500.43	207.93

Note: 1. Disposal refers to any non-recycling operation, even though the operation contains the secondary outcomes of energy recycling.
2. Disposal is the action of dumping products, materials and resources in sinks or handling the above substances with 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

Unit: tons

Types of waste \ Disposal method		On-site	Off-site	Total amount
Hazardous waste				
Recycling method	Reuse	0	0.03	0.03
	Total	0	0.03	0.03
Non-hazardous waste				
Recycling method	Preparation for reuse	0	183.37	183.37
	Reuse	0	6.99	6.99
	Other recycling operations	0	310.07	310.07
	Total	0	500.43	500.43

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: Through the process of checking, cleaning and repair, the products or components which were treated as waste can be used again to serve the same purpose.

Amount of the Waste Directly Disposed Using Disposal Methods

Unit: tons

Types of waste \ Disposal method		On-site	Off-site	Total amount
Recycling method	Incineration (including energy recycling)	0	117.33	117.33
	Incineration (excluding energy recycling)	0	57.48	57.48
	Landfill	0	6.74	6.74
	Other disposal operations	0	26.38	26.38
	Total	0	207.93	207.93

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



Total Amount of Hazardous Wastes Generated during the Manufacturing Processes
Required to be Disclosed Mandatorily or to be Disclosed Voluntarily

Unit: Ton					
Type	Item	Method	2019	2020	2021
 Hazardous waste	pH ≤ 2.0 Waste acid	Chemical treatment	0.155	0.03	0.03
	Total weight		0.155	0.03	0.03
 Non-hazardous waste	Waste iron barrels, lubricants, woods	Reuse	100.87	156.88	190.36
	Composting	Physical treatment of organic sludge	197.32	194.73	367.55
	Waste mixed plastics, wood mixtures, oil mixtures, household garbage	Incineration	100.62	143.93	117.33
	Waste insulation materials, fire-resistant waste, Non-harmful slag	Landfill	47.36	95.99	0
	Others (Note 4)		84.31	79.02	33.12
	Total weight		530.48	670.54	708.36

Note: 1. Reuse includes energy reuse.
2. Incineration waste includes: Mixed plastics, wood mixtures, lubricants, oil mixtures, household garbage, etc.
3. Other wastes include: Waste ion exchange resin, sandblasting waste, non-hazardous sludge, waste paint, paint residue, other single non-hazardous scrap metal or metal scrap mixture, waste wire and cable, non-hazardous organic waste liquid or waste solvent, etc.
The wastes in 2021 included waste ion-exchange resin, 1.58 tons; non-hazardous waste catalysts, 0.28 ton; D-1504 hazardous organic liquid waste, 31.26 tons.
4. In 2021, reuse of waste insulation materials and mixture of used oil were added.
5. In 2021, 310.07 tons of waste were heat treated, reused or converted into resources. 57.48 tons of waste were incinerated, buried or treated with physical process.
6. In 2021, part of the mixture of waste plastics(including waste plastic barrels) were recycled and reused.
7. In 2021, no waste refractory materials or non-hazard waste slags were generated. Waste insulation materials were all recycled and none were buried.

Recycling Statistics

Unit: Kg						
	Paper	Metal	Plastics	Glass	Household Appliances	Total
2019	5,500	0	5,000	150	100	10,750
2020	5,600	0	4,000	200	200	10,000

	Metal	Paper	Pallet	Tire	Air Conditioner	PET Bottle
2021	55,950 kg	18,040 kg	2,040 pc	144 pc	3 pc	NA

Note: 1. In 2021, the calculation method and items of recycling were adjusted.
2. Waste paper recycling includes documents and paper.

Environmental Issues Appeal Mechanism

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

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.

The Environmental Protection Expenditures

Unit: NT\$			
Item	2019	2020	2021
Environmental protection expenditure	17,784,642	18,373,187	17,827,900

2021 Environmental Regulation Management Improvement Mechanism

Item	Amount (NT\$)	Corrective Action
A citation for violating Article 4 of the Water Pollution Control Measures and Test Reporting Management Regulations and Article 18 of Water Pollution Control Act, indicating OUCC's violations which include the missing document during waste water inspection,the imprecision of the water pollution control plan and the diagram of the waste water source of neutralization pit.	10,500	The waste water was then precisely labeled in the Process Flow Diagram (PFD). All pipelines in the waste water plant were inspected and the labeling in the water measures plan were verified. The modified water action plan was submitted to the Environmental Protection Bureau for approval. All of the above corrective actions were followed up, completed, then reviewed and approved by the Environmental Protection Bureau.

Note: There were no major chemical leaks in 2021.



Social Inclusion



OUCC applies their 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.

We occasionally arranged blood donation drives, held along with FE Group donation activities such as the Taipei Expo, August 8th typhoon donations, 921 earthquake donations; and there were spontaneous employee donations to disadvantaged groups and volunteer work, such as donating goods to children’s homes, providing Shanwei primary school with new desks and chairs, emergency assistance to the Linyuan district residents, and participating in beach cleaning activities. The total amount donated to disadvantaged minority and charity groups in 2021 exceeded NT\$ 3.80 million.

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 industries in diversification, which include food, clothing, housing, transportation, education, entertainment and charity. OUCC actively participates in the Group’s “Happy 70” series of public welfare activities 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 to the land, gratitude to the people of Taiwan, and our social commitment to the local community.

These charity events are aimed at promoting from seven aspects, including art and culture, environmental protection, education, healthy living, social participation, community care, and consumer commitment to the different demographic groups in Taiwan, which include children in particular, the remote areas, long-term care and the general public, in which we strive to create synergy to contribute to society.

Community Environment Green Beautification

To make a contribution to air purification in the industrial park by developing a green roadside landscape, OUCC applied to the Ministry of Economic Affairs to sponsor environmental maintenance, adopting about 116 trees, 2,028 m² of sidewalk and 4,020 m² of roads in 2021. The company is responsible for cleaning, watering, sanitation maintenance, pest control, road repair, and cleaning up in the aftermath of a natural disaster, as well as supplementary planting according to plant density.

Year 2021 Contributions to Society	<ul style="list-style-type: none"> Donation as care for the Disadvantaged and Emergency Relief Sponsorship of local festivals and events 	Total Donation over NT\$ 3.80 Million up
Year 2021 Expansion of Social Participation	<ul style="list-style-type: none"> Nonperiodic participation in blood donation drives Donations to organizations that support disadvantaged groups Volunteering in social care activities OUCC has sponsored the procurement of COVID-19 pandemic prevention supplies 	



Donation

Unit: NT\$ ten thousand

Type	2019	2020	2021
Charity	14	166	4
Local Participation	163	159	376
Goods Donation	0	0	0
Total	177	325	380

Cash Donation Activity

Recipient	Activities	Amount (NT\$)
Linyuan District Office Coordination	Sponsoring neighborly community fund (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.)	3,619,485
Village associations, civil societies, associations, etc.	Tours, advocacies, workshops, etc.	52,000
Village associations, communities, etc.	Sponsoring year-end banquets, gatherings, fairs, etc.	44,000
Longji Temple, Futher Temple, Louji Temple, etc.	Sponsorship of temple festivals, temple fair and blessing activities	32,000
Associations	Games	3,000
Village office	Caring for the disadvantaged	3,000
Residents in Linyuan	Emergency Allowances	2,000

PRUDENT THINKING

The OUCC is committed to the provision of a safe and healthy working environment and have made “zero accident, zero injury, and zero pollution” as our goal. We have also complied with and introduced the relevant international SHE standards and regularly review the implementation of environmental health and safety to secure the environment and the safety and health of our employees.

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”



- Accumulated record of **5** million disaster-free man-hours
- The workplace operating environment monitoring items such as CO₂ concentration in the central air-conditioned indoors, specific chemicals, organic solvents, etc. are **all in compliance with the standards**
- Labor representatives accounted for **46%** of the Occupational Health and Safety Committee members



OUCC has been working on the internal 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 **5 million workplace safety man-hours** was achieved in February 2021.

The record was reset later in April.

410 thousand workplace safety man-hours were accumulated as of December 2021.



Safe & Healthy Workplace

The OUCC 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 and safety, distribution safety, contractor safety, waste and reduction management, and product safety management.

To prevent failure and detection of abnormal conditions in a timely manner, hence, the 5S safety team is formed by senior managers in charge of the plant to perform weekly regular inspection according to designated area, record any defects on the equipment or environment, and submit comments to the inspected unit for improvement in order to detect abnormal conditions in a timely manner.

Record of Awards

Year	Awards
2019	<ul style="list-style-type: none"> We participated in the “2019 Promotion for Corporate Sponsorship of Air Purification Equipment for Schools”, and received a Certificate of Appreciation from the Kaohsiung City Government. The Occupational Safety and Health Administration (OSHA) of the Ministry of Labor entrusted the Industrial Safety and Health Association (ISHA) to issue a certificate of “4.05 Million Accident-free Man-Hours” to the OUCC Linyuan plant. OUCC participated in the “2019 Kaohsiung City Underground Industrial Pipeline and Industrial Park Regional Joint Defense Practice Drill” organized by the Industrial Development Bureau of the Ministry of Economic Affairs, and received a Certificate of Appreciation. The company was commended and rewarded a Certificate of Appreciation for the “Active Promotion of Linyuan Industrial Park Regional Joint Defense” by the Industrial Development Bureau of the Ministry of Economic Affairs. OUCC acted as convener of the Linyuan Industrial Park regional joint defense organization and actively promoted the operation and strengthened joint defense. The company received an “Exemplary Model of the Park” Certificate of Appreciation from the Linyuan Industrial Park Service Center. The Linyuan Industrial Park Service Center held the “Safety Review PSSR” for independent management and received an official letter affirming the participation of OUCC employees.
2020	<ul style="list-style-type: none"> Received the “Self-initiated 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	<ul style="list-style-type: none"> 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 drill by mutual aid group 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 an 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.

Reinforcement of Public Safety Management in Chemical Industry

In 2021, OUCC participated in the project of Strengthening Industrial Public Safety Management - Chemical Substances Management Techniques organized by IDB, MOEA. By incorporating those internationally recognized chemical substances management techniques, OUCC is able to effectively master the chemical hazards in the process safety information and implement respective control measures to ensure the hazards can be effectually contained.

As soon as the hazards associated with critical chemical substances of the plant and the production processes are identified, disaster simulation and analysis are carried out, and respective response measures are established in order to improve the management of chemical substances and prevent the incidents caused by the leakage of highly hazardous chemical substances.



Comprehensive Occupational Safety and Health Management

In order to ensure the standard control and compliance of various operations in the factory area, the OUCC establishes and implements a management system in accordance with the requirements of national regulations and Occupational Safety and Health Act, obtained ISO 14001 Environmental Management System, and passed ISO 45001:2018 certification. In addition, HazOp study was carried out for each plant before construction began, and the "Procedure for the Management of Change (MOC)" is mandatory and must be carried out in advance to ensure safety remains intact after any changes related to process equipment, chemicals, technology, security and operation have been made.

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

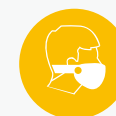
- A total of 465 employees at the Kaohsiung Linyuan Plant (both company staff and contractors); employee coverage rate was 100%. Location was set at: No. 3, Gongye 3rd Rd, Linyuan Dist, Kaohsiung City.
- Operation activities, products or services of controllable, influenceable employees of all units at the OUCC Linyuan plant.
- Number of people covered by the management system internal audit: 445; employee coverage rate of 97%.

Solid Occupational Safety and Health System

The OUCC has an Occupational Health & Safety Committee. The chief plant manager is the appointed convener and there are 13 committee members, including 6 labor representatives, which account for 46% of the members. Regular meeting is held every three months for the review of the occupational safety and health cases and coordination, and a full record is kept and publicized to all employees.



Dedicated Environmental Protection Personnel



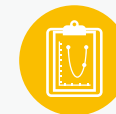
Air pollution prevention: 3 class A dedicated members

Waste / Polluted water disposition: 1 class A dedicated member



Toxic chemicals disposition: 4 class A trained and qualified members

Waste goods removal: 1 class A trained and qualified member



Health risk assessment professional:
1 appropriately trained, qualified and dedicated health risk evaluation member


Toxic chemical substance response professionals
There are 1 expert-level, 1 technician-level, 1 conductor-level and 2 operator-level members.
1 expert-level, 1 conductor-level and 1 technician-level member will be added in 2022.







Diversified Health Management Project

OUCC cares about employees' personal health and provides them with comprehensive health resources, a comprehensive assessment mechanism and a health management program can also be extended to their families. These 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, and create a friendly and healthy work environment.

Program	Content
Health care measures	<ul style="list-style-type: none"> All our plants have first-aid kits in place, we keep them clean and replenish complementary item. Set up the "Automated External Defibrillator (AED)". There is a full-time physician and a nurse stationed in the Linyuan plant to provide employees with healthcare and counseling. 
Health checkup	<ul style="list-style-type: none"> Annual physical examination and re-examination are provided. Physical examination benefits are superior than the ones requested by the law. Annual physical examination for managers and above, and an additional physical examination for senior managers is conducted every two years. Since hospital services were cut due to COVID-19, only 75% the employees received physical examination in 2021. A health report is provided with checkup items, descriptions and health education. A health check follow-up procedure has been established to assist employee of any abnormal findings with further medical review and treatment. If the health condition is unable to adapt to the original job after evaluation of the doctor, a recommendation is made to the unit manager accordingly for the change of workplace or job.

Program	Content
Health counseling & assistance	<ul style="list-style-type: none"> Assist employees and their families to get treatment and registration service. Provide individual counseling service and advice for averting high-risk jobs. Conduct occupational disease risk assessment for all employees at the Linyuan plant; no employee is diagnosed with any occupational disease in 2021, and the occupational disease rate (ODR) is 0%. 0 employee is at high risk. (Note: Occupational disease rate = (total number of occupational diseases / total working hours) x 200,000). Statistical study and classification of the annual health exam results is regularly carried out to track employees with abnormality or of high risk. The full-time plant physician will determine the risk factor and conduct individual counseling on health education, and provide necessary medical treatment.
Health education	<ul style="list-style-type: none"> Information on vaccination collected from health agencies was provided to the employees for easy vaccination. Health education can be arranged at any time if required, of which the content depends on the actual epidemic status quo. Safety is advocated on a daily basis by E-mail to all employees and suppliers. The topics of safety promotion in 2021 include: industrial safety, environmental protection, sanitation, fire protection and epidemic. 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.
Health promotion activities	<ul style="list-style-type: none"> In 2021, on account of the COVID-19 pandemic all the health promotion and pandemic prevention information was publicized on the company website and the bulletins.
EAP	<ul style="list-style-type: none"> Compile information of "Daily Safety Promotion" & "Epidemic Prevention Promotion" information and send it to all employees for reference. The plant nurse in the medical office is available for telephone consultation and provides diversified assistance to employees. After consultation, an employee may be referred to the full-time physician in the plant for counseling, assistance or medical treatment. The family of the employee might also be contacted if necessary. Annual recreational activities are organized for employees to encourage outdoor activity and help keep the physical and mental health of employees in balance. Clubs have been organized by employees where activities are held from time to time. This encourages exchange between employees and family members, and also promotes physical activities and mental health. 
Program for the prevention of human-induced hazards	<ul style="list-style-type: none"> The "Program for the Prevention of Human-induced Hazards" was formulated. It was coupled with self-diagnosed symptoms during annual health checkups, employee medical records, sick leave, time lost records and other related documents. Workplaces and operations with a high rate of complaints were tracked and improvements and preventative measures were implemented. Establish rules for the management of personal posture operations in view of the injuries caused by improper posture of employees in the operation. Administrative changes, health promotion, general and advanced improvements are suggested according to the hazard level, and review and tracking of the effectiveness of improvements is followed at each quarterly occupational safety meeting. 
Preventing for occupational diseases	<ul style="list-style-type: none"> Conduct health management tracking for personnel who are particularly hazardous to health operations. In 2021, three employees needed Specialized Health Checkups, three were classified as Level 2 management cases. As per regulations, they were transferred to Level 1 tracking management after consultation with specialist physicians.

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 take safety and health preventive measures related to overwork to ensure the physical and mental health of employees in the plant, to further reduce the employee's long-term work pressure and job fatigue accumulation due to shift rotation, night shift work and long working hours, which affect the physical capability and cause the risk of cardiovascular disease. In 2021, 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 director 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 nature of the work is in line with a proper level of care for the health of 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">● Risk assessment, management and classification of the health of maternal employees is conducted regularly.● Assessment of the health and the work adaptability of an employee within a year after pregnancy and childbirth.● A nursing room has been set up.● Control strategies and plans have been prepared.● Full-time physician and nurse are stationed on the premises who provide employees with interviews, health counseling and health assessment.● Adaptive work allocation has been established.● Emergency response measures have been implemented.● Improvements have been made to the working environment.● Tracking and management are carried out regularly.



Occupational Safety and Health Management System

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

Item	Regulaitons
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"
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" "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"

Operational Environmental Tests

We are actively promoting improvement in the effectiveness of the pollution prevention system and control. The installed monitored underground wells and flammable gas stations, as well as recycling of carbon dioxide, waste gas incinerators and the capped wastewater plants are in place to reduce the impact to the environment.

To reinforce occupational and plant safety, work site ventilation and potential chemical volatilization were improved. More ventilation fans were added and training in the use of safety protective gear was implemented. Emphasis was placed on safety and health training as well as all the relevant operation management.

In response to neighboring plants emitting foul odor, which enters OUCC premises through air-conditioning systems and cause discomfort to the staff, the internal and external circulation switches have been installed in the air-conditioning systems of each control room to prevent outside odor from affecting the health and working efficiency of the staff. CO₂ concentration detectors are added to monitor the air quality and a new activated carbon air cleaner is also installed in the gas control room.



Ventilation fans



Activated carbon air cleaner



Set up groundwater well monitoring

2021 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 at the work site.	Biannually	
Central AC of indoor CO ₂ concentration detection	Indoor CO ₂ 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	

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.

The HazOp method is used to evaluate the process safety, and the five different indicators in the risk matrix ① significant, ② high, ③ moderate, ④ low, and ⑤ negligible, are used as priorities for improvement, and the countermeasures are as follows:

- ① **Major risk:** items of highest improvement priority, with engineering improvements as the main focus.
- ② **High risk:** items of second highest improvement priority, with engineering improvements as the main focus and administrative management as assistance.
- ③ **Medium risk:** items of third improvement priority, with administrative management as the main focus.
- ④ **Low risk:** items of fourth improvement priority, with administrative management as the main focus.
- ⑤ **Negligible risk:** items of fifth improvement priority, with administrative management as the main focus.

The OUCC has also introduced Layers of Protection Analysis (LOPA) technique in the newly established EOD plant in 2010. High-impact events from the HazOp analysis of the EOD plant were selected for LOPA analysis. The security protection layer was strengthened to achieve the expected effect of risk management. LOPA analyses of the existing processes were all completed. Each unit carried out general hazard identification using the risk ratings chart; a total of 7 improvement cases were tracked in 2021.



Risk ratings	Risk classification	Response measures
Class 1	Extremely high risk	<ul style="list-style-type: none"> The "Risks of Occupational Safety and Health & Management System / Opportunity Assessment and Control Measures Form" should be submitted. Immediately review comprehensiveness of current protective measures, carry out improvement plans, and enhance response capabilities.
Class 2	High risk	<ul style="list-style-type: none"> The "Risks of Occupational Safety and Health & Management System / Opportunity Assessment and Control Measures Form" should be submitted. If the severity is identified as A, discuss the comprehensiveness of the current protective and control measures, carry out improvement plans, and enhance response capabilities immediately. If the severity is identified as B or C, further discussions will be required to decide what improvements needed to be done.
Class 3	Mid-high risk	<ul style="list-style-type: none"> Tolerable risk, but the adoption of more effective physical protective measures should be considered. The feasibility of improvement opportunities for enhancing occupational safety and health opportunities / OH&S management system should be considered.
Class 4	Medium risk	<ul style="list-style-type: none"> Tolerable risk, but the monitoring of current restrictions and conditions should be enforced. The feasibility of improvement opportunities for enhancing occupational safety and health opportunities / OH&S management system should be considered.
Class 5	Mid-low risk	<ul style="list-style-type: none"> Tolerable risk, maintain the current safety and health restrictions and continue monitoring. The feasibility of improvement opportunities for enhancing occupational safety and health opportunities / OH&S management system should be considered.
Class 6	Low risk	<ul style="list-style-type: none"> Tolerable risk, no improvements are required. The feasibility of improvement opportunities for enhancing occupational safety and health opportunities / OH&S management system should be considered.

Risk Hazard Analysis

The process risk is a key issue to the safe environment. Thus, we conduct preliminary hazard analysis on the process change of the output pump model, capacity, and pipelines of the new propylene oxide storage zone to identify the safety risks of the work field, provide process safety assessment for high risk equipment, and request for improvement within a specific period of time.

Production Process Disaster Prevention Measures

	Production Process Isolation	Safety Configuration
Operational procedures of tank system abnormalities	<ul style="list-style-type: none"> Emergent activation of the ESD system. Shut off isolation valve. 	<ul style="list-style-type: none"> Combustible gas detectors are installed on site. Personnel are distributed with canister gas mask and goggles. Storage tanks and unloading stations are equipped with emergency foam, sprinkler system (with fire hydrant and water cannon for firefighting).
Emergency response of truck leaking upon unloading	<ul style="list-style-type: none"> Propylene oxide tank outlet pipeline is equipped with flow control valve to activate the shut-off when overflowed. To prevent large amount of leakage caused by a broken pipeline, a remote control switch is also equipped to activate an emergent shut-off. Propylene oxide storage tanks and unloading stations are equipped with sprinkler system as a fire protection. 	<ul style="list-style-type: none"> Equipped with DCS the chain logic system for production process. The press button for emergency stop is equipped both on-site and in the control room. Personnel are equipped with class-A protective outfit when implementing the relevant isolation operations upon leakage. Emergency response of propylene oxide truck leaking upon unloading. Set up FM-200 automatic fire extinguishing system in 14 MCCs.

Safety Prevention Mechanism

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 as a response to the resolve of top management, request of the Far Eastern Group, and the need for environmental safety and the health of stakeholders.
- "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 make improvements to the occupational safety and health management system to enhance performance.
- 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.

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 time. 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.

Sobriety Testing Before Entry

The "Work Rules" was amended to 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.

- A measured alcohol level of 0.01 to 0.14 mg will result in entry refusal. A verbal warning will be given to first-time offenders. The offender must provide a declaration stating specific improvement and be targeted for follow-up.
- The day's absence will be treated as an off day. A second offence will result in a minor demerit and the day's absence will be treated as an off day. A three-time offense will result in a major demerit and the day's absence will be marked as an absence from work.
- A measured alcohol level of 0.15 mg or more will result in entry denial and a major demerit. The day's absence will be marked as absence from work.
- Individuals failing the sobriety tests for an accumulation of three major demerits will be handled according to Article 33 (termination of contract)

Safety and Health Education Training

In 2021, OUCC continued to promote Health, Safety and Environment training. The topics are: hazard awareness, first aid and evacuation in case of leakage of specified chemical substances, case study of petrochemical plant incidents, explosimeter usage, fire alarm switchboard operation, advocacy for protecting worker from occupational accidents, advocacy for refusal right, etc.

Employees may voice opinions and ask questions during courses for effective interchange with their lecturers to ensure that employees apply what they have learned.



2021 Safety and Health Education and Training Results

Education and Training Project	Frequency	Hour	The number of participants
General safety and health training (including hazard awareness)	4	3	243
Occupational safety and health training for new employees	13	3	24
On-the-job training for the supervisors in charge of organic solvent operations	3	6	3
On-the-job training for paramedics	6	3	6
On-the-job training for the supervisors in charge of scaffolds assembly works	2	6	2
On-the-job training for the supervisors in charge of specified chemical substance operations	8	6	11
On-the-job training for the supervisors in charge of hypoxia operations	6	6	8
On-the-job training for the supervisors in charge of high-pressure gas supply and consumption operations	2	6	10
On-the-job training for high-pressure gas vessel operators	5	3	10
On-the-job training for the supervisors in charge of high-pressure gas safety operations	4	6	8
On-the-job training for forklift operators	14	3	24
On-the-job training for boiler operators	2	3	2

Participating in 2021 International Process Safety Forum

In 2021, OUCC was invited to share its experience in hazard control and prevention of chemical process in the 2021 International Process Safety Forum organized by the Occupational Health and Safety Administration, Ministry of Labor. Through the exchange of international manufacturing process management techniques and experience sharing, the manufacturing process safety of domestic petrochemical industry is expected to be enhanced and in line with the international standards.



<https://www.chinatimes.com/realtimenews/20211217002797-260410?chdtv>

TAKE 5 Safety Training

Purpose:

TAKE 5 is a safety check and audit reinforcement tool, taking the initiative to effectively eliminate the accident factors through the five actions, and conduct two-way safety communications in all levels.

Steps:

T Talk (Stop, Step Back, Observe)

- Do I understand my task?
- What's the role between myself and my colleagues?
- Have I communicated with all those who will be affected by my task?
- Will my task affect other people?
- Have I communicated with anyone else through any method that makes the task safer?

A Action (Walk around)

- What is the effect of my action on my safety?
- What is the effect of my action on the safety of others?
- Do I know the steps/procedures?
- Have I applied for the permit?
- Have I read the contents of the permit?

K Knowledge (Identify any Hazards)

- Do I know if there are any hazardous items surrounding the working environment?
- Any possible slip, trip or fall? Will it be in contact with dangerous substances?
- Is there any possible dropping or protruding objects?
- Is there pressure in the equipment/pipe? Does the equipment need to be isolated and disconnected from power?
- Is the surface hot? Will I be burned?
- Will my task affect other operations around me?

E Equipment (Control, Safety Protection)

- Has the danger been eliminated or controlled?
- Do I have the proper protective gear to do this task?
- Do I have the right tools to do this task?
- Are the tools and equipment in good condition?

Implementation

Noise Prevention Measure

- Notices of applying ear protection are displayed at all the entrances to the plant with noise pollutant.
- Personal hearing tests are carried out every six months.
- Plant personnel must wear earplugs or earmuffs before entering noise polluted spaces.
- Every employee is arranged for an annual precision hearing test. No employees experienced hearing disorders in 2021.
- A full-time physician and a nurse are stationed in the plant and 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 an audit of safety every month with improvement tracking carried out.
- Combine occupational health and safety with personnel key performance indicator (KPI) as a criteria for employees’ performance bonuses, which means bad performance results in bonus deducton. And we encourage all personnel to report false alarm incidents.
- The Plant supervisors participate regular safety meetings to discuss, communicate, share experience and coordinate with each other on safety and health issues.
- An OUCC Safety and Health Line Group has been created and the plant’s supervisors and contractors are requested to join the group in order to reflect, share and communicate ideas and opinions.

- In 2021, OUCC accumulated 411,000 workplace safety man-hours (mid- and long-term goal: two million workplace safety man-hours).
- In 2021, OUCC’s contractors accumulated 830,000 workplace safety man-hours (mid- and long-term goal: 1.5 million workplace safety man-hours).

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.




Suspension of tank cars



Separate lanes for people and vehicles



Reinforced guardrail on tank top

Purpose	Improvement Items and Procedure	Result
Improving the safety at the waiting location of ethylene oxide tanker trucks	The waiting area for ethylene oxide tanker trucks to be loaded is designated to avoid all tanker trucks from entering high-risk area.	 Achieved
Preventing employee's head bumping into lower pipe racks	Thick and soft pads are installed on pipe racks to minimize the risk of collision	
Preventing the workers from using the same access route as forklifts	Separate routes for workers and vehicles are provided, e.i. the side door for the workers and the front door for forklift. Entrances and exits are properly marked.	
Preventing fall from the top of atmospheric storage tank	Guard rails are installed along the route for the workers to conduct inspection or repair work (e.g., breather valve).	

Types of work-related injuries, injury rate calculation, rate of occupational diseases, lost day rate, absence rate and number of work-related deaths

Scope	OUCC			Contractors		
	Gender					
Item						
Total working hour (Hour)		572,092			287,019	
Total number of lost days (days)		66	0	66	0	0
Lost Day Rate (LDR)		23.07	0	23.07	0	0
Total number of absent days		397.5	23.875	421.375	0	0
Absence Rate (AR)		0.00%	0.00%	0.07%	0	0
Number of fatalities as a result of work-related injuries (persons)		0	0	0	0	0
Fatalities as a result of work-related injuries rate (%)		0	0	0	0	0
Number of high-consequence work-related injuries (persons)		2	0	2	0	0
high-consequence work-related injuries rate		3.5	0	0	0	0
Number of recordable work-related injuries (persons)		3	0	0	0	0
Recordable work-related injuries rate (%)		5.24	0	0	0	0
Type of work-related injury		Fall and burn injuries			-	
Number of fatalities as a result of work-related illness (persons)		0	0	0	0	0
Fatalities as a result of work-related illness rate (%)		0	0	0	0	0
Number of cases of recordable work-related illness		0	0	0	0	0
Type of work-related illness		-			-	

Note: 1. Lost Day Rate (LDR, rounded down to the second decimal place) = (total workdays lost / total work hours) x 200,000
 2. Absence rate (AR, rounded down to the second decimal place, including personal leave, sick leave, absenteeism, etc.)=(total lost days/total man days)x100%
 3. 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
 4. Rate of high-consequence work-related injuries = (Number of high-consequence work-related injuries / total work hours) x 1,000,000
 5. Rate of recordable work-related injuries = (Number of recordable work-related injuries / total work hours) x 1,000,000
 6. Total work hours of contractors: total work hours of contractor, individual or organization at the work site at OUCC, from punch clock recordings and statistical calculation.
 7. Statistical data does not include commuting accidents.



Better Communication with Workers to Improve Occupational Safety and Health

OUCC followed the “G0300-WI-007 Guidelines 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 bilateral communication channels for internal employees, external contractors and the relevant stakeholders.

Environmental Safety and Health Risk Assessment and Improvement Results

The PDCA cycle of ISO 45001 has been adopted from the concept of corporate sustainable management, for the identification of risk types and management measures based on routine and non-routine activities, behavioral factors, equipment, materials and external hazards outside the workplace through hazard identification and assessment. The business operations in the management system are continuously optimized and implemented through performance and compliance assessments as well as internal audits to enhance workplace safety and health performance.

The management mechanism: Risks are verified prior to the addition of new equipment or new chemical substances. If the risk score is above Class 4, control measures which are based on priority, including elimination, replacement, engineering controls, signs / warnings / management and control, and the use of personal protective gear, are all considered as reduction for improvement.

Improvement Case

Preliminary Hazard	Level before Improvement	Safety Improvement Mechanism	Level after Improvement
Response to power outage caused by natural disaster (All feedstocks to the reactors are cut off or isolated and SIS covered serial control devices are bypassed.)	5	<ul style="list-style-type: none">Establishing the BYPASS control list for EOD plantA new regulation that the bypassing shall not be implemented without the approval from the superiors is exhibited on bulletin board or reiterated during intra-division advocacy.	6



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 the enterprises.

Therefore, OUCC attaches 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 2021.

Transportation Risk Assessment

OUCC outsources all of its transportation of products 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 and nearby residents. The social cost incurred from the environment impacts is tremendous.

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

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

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 in the country, 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"> 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: <ul style="list-style-type: none"> A. Contractor’s Operation Safety Commitment to OUCC while Working in the Plant B. Tanker Driver Compliance Matters C. Tanker Operational Safety Management Handbook 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. 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. Driver requirements: OUCC requires that all tanker drivers must have dangerous goods transport license and driver’s license, and the gas tanker driver is required to have two additional licenses for “high-pressure gas operating license” and “high-pressure container operating license”. The driver must also have an annual physical checkup document and any driver with heart disease or hypertension is prohibited from driving chemical tankers.
Transportation Regulations	<ol style="list-style-type: none"> Control mechanism: Implementation of personnel control, vehicle and cargo permits, coupling with tanker weighing and driver ID, strictly controls the admission of drivers, vehicles and their cargo. Safety Control and Management: The delivery route taken by tankers transporting hazardous materials is regulated in accordance with Article 84 of the Rules for Road Traffic Safety. All forwarders have been officially informed by OUCC that the “Rules Governing Safety and Health for Hazardous Goods Delivery” and “Transportation Violation Penalty Standards” are part of the contract and strict compliance is required. Safety checkup: Each transport vehicle entering or leaving the factory is required to have a visual check. All drivers are requested to make regular voluntary inspection and regular reviews are carried out by OUCC staff. The loaded vehicles are all checked the same way. Transit checkup: Each transport route must be confirmed by the motor vehicle supervision office. Dangerous goods must apply for a temporary road permit. The driver must drive on the scheduled route set down in the temporary road permit and the journey will be confirmed by GPS recording.
Transportation Meeting	<ol style="list-style-type: none"> Regular Meetings: To ensure the effective management of transportation safety and to discuss safety issues with transportation providers, OUCC held meetings with different transportation providers on a regular basis. Meeting Results: The matters discussed included: transportation distributions, follow-up and the review of nonconformity, transportation mode coordination, controversial issues, policies and safety information propagation and vendor issues response. Goal: To ensure the rights of drivers, all tanker truck operators are requested to increase drivers’ “employer’s accident and liability insurance” coverage to a minimum of five million NT dollars starting from 2021.
Emergency Response	<ol style="list-style-type: none"> Emergency response mechanism: Each transport company is required to provide an Emergency Response Prospectus. 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.

Process	Control Mechanism	
Education and Training	Outsourced drivers should receive refreshed training every year to improve their depth of crisis response.	
	H1 / 2021	H2 / 2021
	Training topic	Emergency response procedure (notification and evacuation), defensive driving, familiarity with vehicle body and equipment, standard operating procedure for loading and unloading liquefied gases, hazardous materials labeling and safety information, case review and experience share of accidents and abnormalities
	Number of Participants	21
	Number of Suppliers	3
Diversified Auditing	Participation Rate (%)	100
	Note: Participation Rate=total forwarders participated in the training / total forwarders in 2021	
	<ol style="list-style-type: none"> Onsite audit: the transport company is subject to an onsite audit every year that is part of the suppliers audit. To ensure that the transport companies attach enough importance to the quality of transportation, the results of the onsite audit shall be the basis for the distribution of freight charges and volume ratio for the following year. Road audits: are classified as occasional inspections or as GPS satellite positioning. For occasional inspections, vehicles can be followed to record the driver’s behavior on the road, driving speed, and unloading operations. GPS satellite positioning audits are used to determine the vehicles position and to check the driving speed and the idle time on the road, as well as the choice of route or zone have been normal. 	

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 was denied entrance to the plant.
- Contractors, subcontractors, drivers, etc., must wear masks at all times when they are inside the plant.
- Site workers must wear masks at all times when contacting with contractors, subcontractors, drivers, etc.
- 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 Card, taking temperature, real-name registration and Social Distancing APP are implemented. Truck drivers must present the proof of social distance before entering upon the plant premises.
- The five rules governing the implementation are: zero contact, visual confirmation of document, minimal conversation, keeping a safe distance and frequent sanitization.

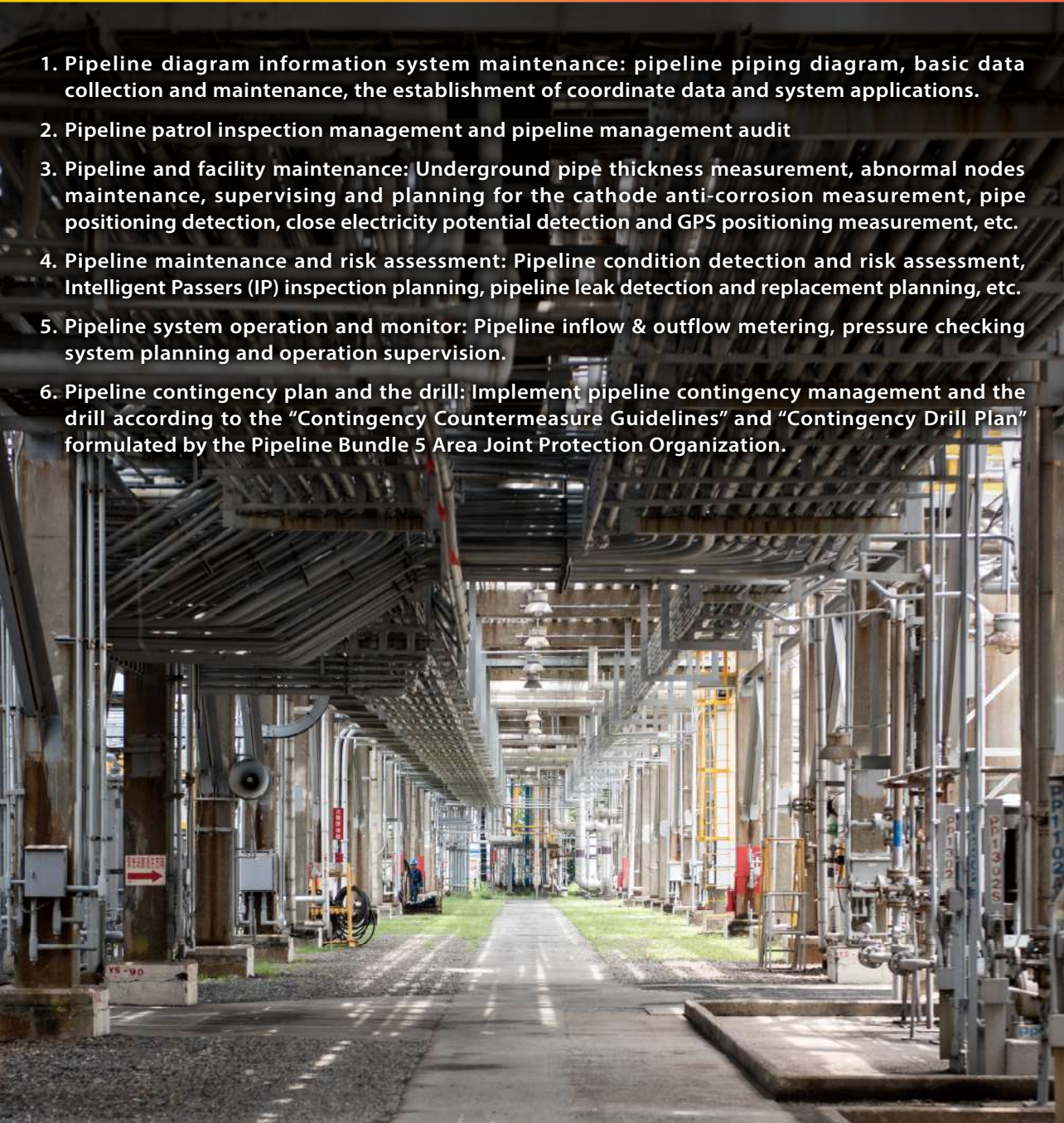


Field Pipeline Maintenance Operation and Management

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 outside the plant to comprehensively control the inspection, testing, and maintenance status, so as to reduce the risks of the pipelines outside the plant.

Underground Pipeline Maintenance Operation

1. Pipeline diagram information system maintenance: pipeline piping diagram, basic data collection and maintenance, the establishment of coordinate data and system applications.
2. Pipeline patrol inspection management and pipeline management audit
3. Pipeline and facility maintenance: Underground pipe 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.
4. Pipeline maintenance and risk assessment: Pipeline condition detection and risk assessment, Intelligent Passers (IP) inspection planning, pipeline leak detection and replacement planning, etc.
5. Pipeline system operation and monitor: Pipeline inflow & outflow metering, pressure checking system planning and operation supervision.
6. 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 associated with processing, operations and transportation, which might occur at any time, the company regards product type and departmental accountability to proceed with comprehensive simulation and preparation for the probable accidents. A contingency plan is formulated and practical exercises, announcement, education and training are arranged to help on-site staff quickly appreciate the situation at an accident scene and react effectively, so as to minimize the damage of the accident and its effect on people and the environment.

Emergency Response Plan

The OUCC has prepared an “Emergency Response Plan” for the prevention of occupational accidents and the protection of employees against fire, leaks, typhoons, floods, earthquakes, war, transportation accidents, and to deal with notifications, evacuations, rehabilitation and so on. Regular drills and contingency measures are organized to cope with disasters that might occur, and to take immediate action in the event of an accident in an organized and systematic way to minimize damage and loss, and to protect employees’ safety.

In the event of a disaster or an emergency, the internal and external reporting procedure is immediately activated in accordance with the “OUCC Emergency Response Reporting Process.”

Emergency Response Training

Potential manufacturing process and transportation accidents at OUCC are likely to involve chemical spills, fire, tanker accidents, and explosion.

An emergency response team was established and accomplished in 2021 a total of 438 hours external training which included emergency response drill, fire-fighting equipment operation, emergency response team mobility training, and Linyuan Fire Department was invited to participate in the drills .

In 2021, a total of 345 employees received Emergency Response Team training. Also, a total of 204 employees of Linyuan Plant participated in four respective Emergency Response Team trainings. The goal is to give the employees ample knowledge and experience in order to reduce and handle the accidents properly.

Emergency Response Training			Compound Disaster Prevention and Emergency Response Plan	
Types of Emergency Response Training	Session / Time	Number of Participants	Potential Disaster	Emergency Response Plan
Tabletop exercise	40	437	Leak, fire	Emergency response team members and missions
Middle & night shifts firefighting drill / protection gear training	40	345	Transportation incident	Transportation incident emergency response operation
Quarterly response drill	19	165	Typhoon and storm	Typhoon and storm graded emergency response plan
Annual response drill	4	204	Earthquake	Earthquake emergency response procedure

Liquid Oxygen Tanker Leakage Emergency Response Drill

Simulation scenarios

Scenario simulation: A liquefied gas tanker truck operated by a logistics company is moving northbound along Hinsheng Road and Zhenzhou Road when the internal pressure of the tanker is rising, resulting in the valve popping open and oxygen releasing. After notification received from the driver, the unit supervisor mobilizes Emergency Response Team to take emergency actions (following the tanker pressure relief procedure).

Key aspects of exercises

1. All drivers and the Emergency Response Team must be familiar with the disaster reporting procedure and all the response initiation processes.
2. Comprehensive drills are held to help familiarize all emergency response units with their roles and tasks in case of accident.
3. They must have the ability to identify and respond to any unexpected incidents that may result from such transportation accidents and emergencies.
4. Joint drills are carried out with the assistance of other companies in the industry in order to avert disasters and achieve the goal of protecting the employees, people and environment.



2021 Liquid Oxygen Tanker Leakage Emergency Response Drill

Assurance Statement



ASSURANCE STATEMENT

SGS TAIWAN LTD.'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE ORIENTAL UNION CHEMICAL CORPORATION'S ESG REPORT FOR 2021

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 2021. The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the sampled text, and data in accompanying tables, contained in the report presented during verification (2022/04/27-2022/05/19). 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 2021 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 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, including the Principles contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) 101: Foundation 2016 for report quality, and the guidance on levels of assurance contained within the AA1000 series of standards and guidance for Assurance Providers.

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

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

SCOPE OF ASSURANCE AND REPORTING CRITERIA

The scope of the assurance included evaluation of quality, accuracy and reliability of specified performance information as detailed below and evaluation of adherence to the following reporting criteria:

Reporting Criteria Options

1. GRI Standards (Core)
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 Sustainability Reporting Standards (100, 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) 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 organization, 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

VERIFICATION/ ASSURANCE OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the specified performance information included in the scope of assurance is accurate, reliable, has been fairly stated and has been prepared, in all material respects, in accordance with the reporting criteria.

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

AA1000 ACCOUNTABILITY PRINCIPLES (2018) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

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 2021, is adequately in line with the GRI Standards in accordance with Core Option. The material topics and their boundaries within and outside of the organization are properly defined in accordance with GRI's Reporting Principles for Defining Report Content. Disclosures of identified material topics and boundaries, and stakeholder engagement, GRI 102-40 to GRI 102-47, are correctly located in content index and report. For future reporting, it is recommended to have more descriptions of processes flow of inputs, activities, and outputs that lead or could lead to significant waste-related impacts (306-1). Besides, the disclosures of the processes for workers to report work-related hazards and hazardous situations, and an explanation of how workers are protected against reprisals (403-2) are encouraged.

Signed:

For and on behalf of SGS Taiwan Ltd.

David Huang
Senior Director
Taipei, Taiwan
14 June, 2022
WWW.SGS.COM



AA1000
Licensed Report
000-8/V3-BKDLB

Accountants' Limited Assurance

獨立有限確信報告

致東聯化學股份有限公司

本會計師接受東聯化學股份有限公司(已下簡稱「東聯化學」)委託，對於東聯化學民國 110 度永續報告書(以下簡稱「永續報告書」)進行有限確信。

公司的責任

東聯化學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」及全球永續性報告協會(Global Reporting Initiatives, GRI)發布之 GRI 準則及依行業特性參採其他適用之準則編製永續報告書，且維持與編製永續報告書有關之必要控制，以確保永續報告書所列標的資訊未存有重大不實表達。

本會計師的責任

本會計師係依照確信準則公報第一號「非屬歷史性財務資訊查核或核閱之確信案件」，對上開永續報告書所選定之標的資訊(詳附件)在所有重大方面是否依照前述準則編製表示意見，並提出有限確信報告。相較於合理確信，有限確信案件所執执行程序之性質及時間與適用合理確信案件不同，其範圍亦較小，因是取得之確信程度明顯低於合理確信。

本會計師係基於專業判斷規劃及執行確信程序，以獲取相關標的資訊之有限確信證據，且任何內部控制均受有先天限制，因此未必能查出所有業已存在之重大不實表達。本會計師執行確信程序包括：

- 取得及閱讀永續報告書；
- 詢問及訪談管理階層及攸關人員，瞭解選定標的資訊產生之相關作業流程及資訊系統，及推動永續責任之現況與期望及利害關係人所關注的議題；
- 瞭解公司編製永續報告書有關政策及程序；

- 分析及以抽查方式測試標的資訊相關文件及記錄。

先天限制

由於諸多確信項目非財務資訊，相較於財務資訊之確信受有更多先天限制，故該等資訊之相關性、重大性與正確性之解釋，可能涉及更多管理階層之重大判斷、假設及解釋，不同利害關係人對該等資訊，亦有可能有不同之解釋。因此，有限確信案件所執行的證據蒐集程度範圍低於合理確信，所提供確信低於合理確信，且必然無法使本會計師辨識於合理確信或審計查核案件中能注意到所有重大事項。此報告對 110 永續報告書及相關內部控制設計或執行之有效性未提供任何確信。

確信結論

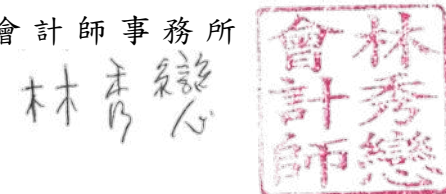
依據所執行之程序及所獲取之證據，本會計師並未發現東聯化學民國 110 度永續報告書中所選定之標的資訊，在所有重大方面有未遵循相關基準編製而需做重大修正之情事。

其他事項

本會計師的工作僅限於約定事項對於在獨立有限確信報告中對東聯化學報告，而非其他目的。本會計師無須就所執行的工作，所出具獨立有限確信報告或作出之結論對於東聯化學以外任何第三方負擔任何責任。東聯化學網站之維護係東聯化學管理階層之責任，對於確信報告公告後，確信標的資訊或適用基準之變更，本會計師將不負就該資訊重新執行確信工作之責任。

品佑聯合會計師事務所

會計師



中 華 民 國 1 1 1 年 6 月 2 3 日

Management Approach of Material Topics

SDGs	Material topics	Purpose of the management approach	Policies	Goals	Grievance Mechanisms	Assessment Mechanisms	Management Approach and Results (page)
	Economic Performance	Establish a sound corporate governance structure and transparent communication channels, strive to improve business performance and protect investor-related rights and interests.	“Business Integrity Principles” “Codes of Conduct” “Responsible Care Charter”	Transparent governance Stable and continuous income	Stakeholder Contact line (shareholder / investor): 02-2719-3333#230	Independent Directors and evaluation of the relevant authority	36-40
	Energy	Keep close track of its own energy consumption, and formulate the short-, medium- and long-term goals of energy and resources management of OUCC according to domestic laws and regulations and international environmental energy management trends.	“Procedures for the Organization of Energy Saving and Carbon Reduction Committee”	Use carbon emissions in 2020 as the base year, and reduce by 1% per year Plan for the usage of green energy			92-96
	Water and Effluents	To cope with the water resources issues, OUCC dedicates to the enhancement of water resources usage through processing improvement.	“Safety, Health and Environmental Protection Policy”	Use the daily water consumption in 2016 as the base year, and commit to a 2% reduction of water per day and aim to save 100 metric tons of water per day by 2022			98-101
	Emission	Keep close track of its own energy consumption, and formulate the short-, medium- and long-term goals of energy and resources management of OUCC according to domestic laws and regulations and international environmental energy management trends.	“Procedures for the Organization of Energy Saving and Carbon Reduction Committee”	Use carbon emissions in 2015 as the base year, and reduce by 1% per year	SHE contact: 07-6413101#2302	ISO 14001 ISO 50001 ISO14064-1 Environmental regulations	90-91, 97
	Waste	Carry out the keynote of Implementation of Safety, Health and Environmental Protection Policy, and appoint a dedicated personnel responsible for supervision and promotion.	“Code of Control Procedures for Wastewater Discharged into the Wastewater Treatment Plant” “Safety, Health and Environmental Protection Policy”	Meet regulatory requirements with zero environmental incidents			104-106
	Environmental Compliance	With an environmentally-friendly perspective, in the process of industrial development, in addition to complying with the requirements of laws and regulations, we are committed to reducing the generation of harmful substances in the production process.	“Domestic and Foreign Environmental Regulations”				107
	Employment	OUCC believes that employees are important assets, so we are committed to providing comprehensive training, good welfare and working environment. Meanwhile, we emphasize labor interests and rights and set up the labor union and a grievance mechanism.	“Business Integrity Principles” “Code of Conduct and Ethics for Employees” “Responsible Care Charter”	Complete and excellent employee care Employee-friendly workplace Zero labor rights and interests infringement	Stakeholder contact line (employee) 02-2719-3333#281	Domestic society, economic laws Labor Standard Act	62-76
	Labor/ Management Relations						
	Occupational Health and Safety		“Labor Health Protection Rules” “Responsible Care Charter” “Various Disaster Emergency Response Plan”	Zero workplace disaster	Stakeholder contact line (employee) 02-2719-3333#281	ISO 45001 Occupational Health and Safety Management System Labour union, collective agreements Domestic laws and regulations	113-134



GRI Standards Index

General Disclosure

General Disclosure	Disclosure Items	Page	Note
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102-4	Location of operations	32	
102-5	Ownership and legal form	2	
102-6	Market served	32	
102-7	Scale of the organization	32, 64	
102-8	Information on employees and other workers	64	
102-9	Supply chain	81	
102-10	Significant changes to the organization and its supply chain	-	No significant changes
102-11	Precautionary principle or approach	44-47, 51	
102-12	External initiatives	113	TRCA
102-13	Membership of associations	58	
Strategy			
102-14	Statement from senior decision-maker	6-7	
Ethics and integrity			
102-16	Values, principles, standards, and norms of behavior	33, 48	
Governance			
102-18	Governance structure	39, 41	
Stakeholder engagement			
102-40	List of stakeholder groups	55	
102-41	Collective bargaining agreements	66	
102-42	Identifying and selecting stakeholders	57	
102-43	Approach to stakeholder engagement	55	
102-44	Key topics and concerns raised	55	
102-45	Entities included in the consolidated financial statements	-	P.126 of 2021 Annual Report
Reporting practices			
102-46	Defining report content and topic boundaries	57	
102-47	List of material topics	57	
102-48	Restatement of information	-	None
102-49	Changes in reporting	57	
102-50	Reporting period	2	
102-51	Date of most recent report	2	
102-52	Reporting cycle	2	Annually
102-53	Contact appointed for questions regarding the report	3	

General Disclosure		Disclosure Items	Page	Note
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Management Approach				
103-1	Explanation of the material topics and its boundary		57	
103-2	The management approach and its components		140-141	
103-3	Evaluation of the management approach		140-141	

Topic-specific Disclosures

General Disclosure		Disclosure Items	Page	Note
201 Economic Performances (2016)				
201-1	Direct economic value generated and distributed		36	
201-3	Defined benefit plan obligations and other retirement plans		74-76	
201-4	Financial assistance received from government		23	
202 Market Presence (2016)*				
202-1	Ratios of standard entry level wage by gender compared to local minimum wage		75	
202-2	Proportion of senior management hired from the local community		63	
302 Energy (2016)				
302-1	Energy consumption within the organization		92	
302-2	Energy consumption outside of the organization		97	
302-3	Energy intensity		92	
302-4	Reduction of energy consumption		94	
303 Water and Effluents (2018)				
303-1	Interactions with water as a shared resource		98	
303-2	Management of water discharge-related impacts		101	
303-3	Water withdrawal		99	
303-4	Water discharge		99	
303-5	Water consumption		99	
305 Emissions (2016)				
305-1	Direct (Scope 1) GHG emissions		90	
305-2	Energy indirect (Scope 2) GHG emissions		90	
305-3	Other indirect (Scope 3) GHG emissions		91	
305-4	GHG emissions intensity		90	
305-5	Reduction of GHG emissions		90	
305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions		103	



General Disclosure		Disclosure Items	Page	Note
306 Waste (2020)				
306-1	Waste generation and significant waste-related impacts		104	No chemical spills
306-2	Management of significant waste-related impacts		104	
306-3	Waste generated		104	
306-4	Waste diverted from disposal		105	
306-5	Waste directed to disposal		105	
307 Environmental Compliance (2016)				
307-1	Non-compliance with environmental laws and regulations		107	
308 Supplier Environmental Assessment (2016)*				
308-1	New suppliers that were screened using environmental criteria		82	
308-2	Negative environmental impacts on the supply chain and actions taken		82-83	
401 Employment (2016)				
401-1	New employee hires and employee turnover		65	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees		75-76	
402 Labor/Management Relations (2016)				
402-1	Minimum notice periods regarding operational changes		66	
403 Occupational Safety and Health (2018)				
403-1	Occupational safety and health management system		115	
403-2	Hazard identification, risk assessment, and incident investigation		116, 119	
403-3	Occupational health services		116, 119	
403-4	Worker participation, consultation, and communication on occupational health and safety		76, 126, 129	
403-5	Worker training on occupational health and safety		119, 124, 133	
403-6	Promotion of worker health		116	
403-7	Prevention and mitigation of occupational safety and health and safety impacts directly linked by business relationships		119, 110, 113	
403-8	Workers covered by an occupational safety and health management system		115	
403-9	Work-related injuries		113, 127	
403-10	Work-related illness		116, 127	
404 Training and Education (2016)*				
404-3	Percentage of employees receiving regular performance and career development reviews		74	
413 Local Communities (2016)*				
413-1	Operations with local community engagement, impact assessments, and development programs		108-109	
413-2	Operations with significant actual and potential negative impacts on local communities		108-109	

General Disclosure		Disclosure Items	Page	Note
414 Supplier Social Assessment (2016)*				
414-1	New suppliers that were screened using social criteria		82	
414-2	Negative social impacts on the supply chain and actions taken		82-83	

Note: **are voluntarily disclosed material topics of OUCC.

SASB Index - Chemicals

Through our incessant endeavors in the enhancement of sustainability disclosures, OUCC'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, 2021.

For the relating content and page, please refer to the 2021 OUCC SASB Report: https://www.oucc.com.tw/storage/system/ESG/SASB_PDF/SASB.pdf?t=1659339692

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	4
	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	4-5
Air Quality	RT-CH-120a.1	Air emissions of the following pollutants: (1) NO _x (excluding N ₂ O), (2) SO _x , (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs)	6
Energy Management	RT-CH-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy	7
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	8
	RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	8
	RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	8-9
Hazardous Waste Management	RT-CH-150a.1	Amount of hazardous waste generated, percentage recycled	10
Community Relations	RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests	11
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	12
	RT-CH-320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	12
Product Design for Use-phase Efficiency	RT-CH-410a.1	Revenue from products designed for use-phase resource efficiency	13
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	14
	RT-CH-410b.2	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact	14
Genetically Modified Organisms	RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs)	15
Management for 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	16
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)	17
	RT-CH-540a.2	Number of transport incidents	17

Table 2. Activity Metrics

SASB CODE	ACTIVITY METRIC	PAGE
RT-CH-000.A	Production by reportable segment	18

* The page is referred to the independent SASB report.

The Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies, Article 4 - Chemical Industry

Rules	Page	Note
(1) Total energy consumption	92	
(2) Total amount of water withdrawn, and volume of effluent required to be disclosed under the law or to be disclosed voluntarily	99	
(3) Total quantity of hazardous wastes generated during the production process of products required to be disclosed under the law or to be disclosed voluntarily	106	
(4) Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	127	

