OUCC 東聯化學股份有限公司
Oriental Union Chemical Corp.

ORIENTAL UNION CHEMICAL CORPORATION

2020

CORPORATE SOCIAL RESPONSIBILITY REPORT

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THE 2020 CORPORATE SOCIAL RESPONSIBILITY REPORT

About this Report

Welcome to the 2020 Corporate Social Responsibility(CSR) Report of the Oriental Union Chemical Corporation (stock code:1710, hereinafter referred to as the "OUCC"). We would like all the stakeholders that care about us to better understand the challenges of sustainable development faced by the chemical industry, as well as our efforts and achievements in CSR aspects.

- This CSR Report is issued in both Chinese and English versions. You are welcome to download them from our official website.
- Website: https://www.oucc.com.tw/

Reporting Period and Organizational Boundaries

The CSR Report discloses the CSR management policy, material topics, responses, and action performance of the OUCC in 2020(Jan. 1 to Dec. 31). Some issues tracing back to 2018 or 2019 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.

Writing Reference and Guarantee

The CSR 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 CSR 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 CSR 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
- AA1000 (2008) AS: Type I intermediate assurance level

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

Environment
- ISO 14001
- ISO 14064-1
- ISO 50001

Society
- ISO 45001

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Feedback

If you have any comments on the "Oriental Union Chemical Corporation 2020 Corporate Social Responsibility Report," you are invited to forward your valuable comments and advice to keep us move towards the concept of sustainable governance.

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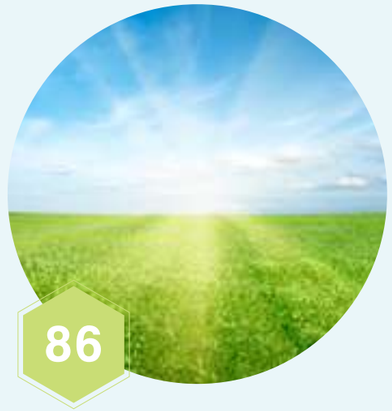
SINCERE AND DILIGENT PARTNER



SOLID CONTRIBUTION

PRUDENT THINKING

CHAIRMAN'S MESSAGE

Welcome to the 2020 Corporate Social Responsibility (CSR) Report of the Oriental Union Chemical Corporation (hereafter referred to as "OUCC"). Looking back at the past year, despite being in a rapidly changing environment, OUCC upheld the spirit of "sincerity, diligence, thrift, prudence, and innovation" on the path to sustainability. By cultivating one step after another and accumulating its capital through persistent innovation, it demonstrates the fulfillment of corporate social responsibility through actions.

In 2020, the COVID-19 pandemic hit the global economy and became the most serious challenge of the century for all companies. OUCC promptly activated the response mechanism at the beginning of this year. Aside from keeping close attention on pandemic development, OUCC has developed technological interfaces and tools to facilitate the prompt notification to the staff and keep track of the factory status at any time, production schedules were flexibly adjusted to ensure uninterrupted operation. OUCC was committed to ensuring the health and safety of the employees.

In an ever-changing market environment, OUCC continues to cultivate the core business to increase the competitiveness of its basic products; it also actively sought corporate transformation to utilize its innovative strengths, develop green chemicals, and commit to the development of diversified products of highvalue. The development of customized specialty chemicals could be widely applied to various fields, such as chemical fibers, textile dyeing, paints, cement, electronics, plastics, and daily detergents.

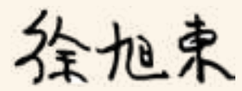
As a corporate citizen, OUCC worked hard on the promotion and implementation of ESG. The outcomes in 2020 included:

1. The promotion of green processes: OUCC set up photovoltaic system for self-generation, and plan highly efficient and low carbon cogeneration equipment. In response to the structural change of energy in 2025, our goal is to reach 10% green energy in five years.
2. Digital transformation: In view of the intelligent manufacturing ,OUCC successfully integrated BI business intelligence, strategic planning, and predictive analysis into the operation information platform, where the data potential could be fully utilized to meet the needs of the operative decision makers or departmental analysis all at once.
3. Create a low carbon industry chain: Through crossed-industry collaboration, OUCC joined hands with Ya Tung Ready Mixed Concrete Co., Ltd. (hereafter called Ya Tung) to develop chemical agents and functional additives for concrete in order to fulfill the needs of end users and the market, officially entering the domain of construction chemicals.
4. Develop the Enterprise Information Platform (EIP): promote the staff health and care system to protect and track the employees' health and safety during the pandemic.
5. Optimize the potassium iodide (KI) recovery technology: OUCC continues to maximize the profits of circular economy. Also, the wastewater recycling system is officially operating, and is capable of recycling 70% of the effluent to protect water resource.

To ensure the safety and health of employees, OUCC is committed to maintaining the work environment, aiming for "zero accidents, zero injury, zero pollution", building a comprehensive health and safety mechanism. The Linyuan Plant reached the record of 4.91 million safety man-hours in 2020, and the goal is to surpass 5 million safety man-hours by 2021.

On the path to sustainability, OUCC actively links to the international trends, listens to the voices of the stakeholders, and implements these sustainable actions into corporate operations, to achieve a balance between production, environment and humanities, fulfilling our commitment to CSR while join hands with our supply chains. Meanwhile, your support and encouragement to us is much appreciated.

Chairman
Oriental Union Chemical Corporation



OUCC Sustainable Development Strategy

The Sustainable Development Goals (SDGs) are the global principles for guiding sustainable development. As a corporate citizen, OUCC is one of the key drivers for the 2030 global blueprint on sustainability. The company has identified the sub-goals of SDGs as the first direction for improvement by understanding the idea of SDGs with reference to the "Chemical Sector SDGs Roadmap". This includes stakeholder's expectations and comprehensive risk analysis to discover all the relations between the 169 targets. OUCC is committed to ongoing development of innovative strategies, the adoption of internal goals on sustainable development, and plans for a sustainable future.

Innovative OUCC

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

Short-term Goal (2021)

- 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 chemical ethylene oxide derivatives to 4,000 tons/month, maintaining stable growth and profits
- Develop deep processing techniques for ethanolamine coproducts and polyetheramine related products and set up mass production factories to enter the high-value downstream product domain with increased added value of products

Mid-/Long-term Goal (2022-2031)

- Continue to research and develop innovative technologies and develop products with low energy, recyclable plastics, biodegradable, environmentally friendly, and high value
- Step into the domain of high-tech high-value specialty chemicals and increase product value to develop deep processing techniques related to own raw materials
- Complete the development of deep processing for amine-related derivatives, becoming the most comprehensive production factory for amine products in the country

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 (2021)

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

Mid-/Long-term Goal (2022-2031)

- Continue to improve internal risk management system
- Continue to enhance the CSR negotiation mechanism

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Sincere and 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 Partnerships

Short-term Goal (2021)

- Conduct a survey for employees
- Conduct human rights training courses on seven major labor issues of the Responsible Business Alliance (RBA)
- Implement a new performance bonus system

Mid-/Long-term Goal (2022-2031)

- Conduct training courses in cooperation with the vocational training center

Satisfied Customer

Short-term Goal (2021)

- Continue to perform internal audits and third-party external audits to effectively implement the ISO management system

Mid-/Long-term Goal (2022-2031)

- Continue to optimize control measures and improve customer satisfaction

Chemical Supply Chain

Short-term Goal (2021)

- 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 (2022-2031)

- 100% of freight forwarders have acquired RSQAS certification
- Contractor's zero-work safety accident up to 990,000 safety man-hours

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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 (2021)

- Accumulated carbon reduction of 35,000 t-CO_2e
- 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 (2022-2031)

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

Inclusive Society Establishment

Short-term Goal (2021)

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

Mid-/Long-term Goal (2022-2031)

- 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 (2021)

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

Mid-/Long-term Goal (2022-2031)

- Promote waste management carbon reduction KPI to achieve carbon reduction goals
- Optimize prevention and control 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"

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INNOVATIVE OUCC

OUCC has set the innovative goal of becoming "the top chemical company with the most unique features", ranging from research and development, equipment production, market development, to application; through innovative technologies and thinking, we gradually accumulated our own technical capabilities to develope the high value-added ethylene oxide derivatives and specialty chemicals, step by step, to sketch out the blueprint of OUCC's green chemical business.

We would form specialized teams by integrating research and development, technology, operations and productions to suit the needs of different industries and clients. Also, we create an online information integration management platform to enhance horizontal communication between departments in order to expedite the commercialization of products, providing more complete technical services and excellent quality products to our customers.

The investment OUCC has put into research and development of innovative domains will enable OUCC to transform into a diversified chemical company specializing in specialty chemicals, that persistently pursues profits and growth, and becoming a green enterprise that is sustainable and environmental.

2020 Sustainable Performance

- Promote circular economy to generate profit of NT$**31.10** million per year
- R&D investment of NT$**150** million
- **Various innovative technologies** have been developed and applications made for international patents

Implementing the Circular Economy

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

New Business Model: The Circular Economy

OUCC realizes the urgency and severity of the lack of natural resources, and believes that "circular economy" will be one of the keys to supporting the next generation of economic development. Through technological innovation, we expect to implement the core concept of circular economy, "minimizing environmental impacts, maximizing value of resources", in the production procedures to reduce the waste of resources, and to increase the proportion of reusable materials in order to reduce the impact on the industry.

To build circular economy model, we develop a sustainable cycle of "resources-products-renewable resources", let resources return from the cradle to the cradle, allowing the material to circulate continuously. OUCC has invested NT$19.2 million in the development of innovative "potassium iodide (KI) recovery technology", from basic design, equipment procurement and production, civil construction, equipment installation to testing. In the ethylene carbonate (EC) plant, the procress of increasing the concentration of potassium iodide from the potassium iodide waste liquid, and reuse it in the production process of other products not only reduces the cost of waste treatment, but the byproduct produced during the production process also brings in revenue to the company.

We utilized innovative thinking and technology, and converted the "waste" of potassium iodide waste liquid into "useable renewable resources". The traditional linear economy strategy changed into a circular economy model, which created additional economic value, making strides towards implementing circular economy in the industry.

EC process ▼ KI waste liquid ▼ Outsourcing (Traditional Thinking)		Circular Economy Thinking: EC process ▼ KI waste liquid ▼ Reuse resources ▼ Invest in a new process
In the production of ethylene carbonate (EC), potassium iodide (KI) is used as a reaction catalyst, and the waste liquid produced during the production process contains 5% potassium iodide (KI), and in the past, the treatment of the waste liquid were outsourced.	**Process**	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$8 million per year	**Outsourcing costs**	NA
NA	**Economy benefits**	1. Save KI procurement costs NT $7.46 million 2. MEG recycling, benefit approx. NT$3.42 million 3. Save approx. NT$20.22 million for outsourcing
outsourcing processing costs NT$20.00 million (Note)	**Total**	Benefits NT$31.10 million
NA	**Envirnmont benefits**	1. Reduce energy usage of 1,011 tons and carbon emissions of 93,601 kg-CO_2e from waste liquid transportation 2. Reduce the environmental impact caused by waste liquid leakage
NA	**Society benefits**	1. The income generated from reusing the byproduct is used to upgrade the employees' occupational health and safety and welfare. 2. It decreases the risk of leakage from the transportation of waste liquid, which protects the safety of community residents (such as causing skin rashes).

Note: the company has been producing 1,011 tons of potassium iodide (KI) waste liquid per year, with an outsourcing cost of approximately NT$20.22 million per year in 2020.

The Circular Economy -Air Separation Units (ASU)

OUCC utilized sales strategies of circular economy, stable supply and win-win method, invested NT$36 million on supplying excess industrial gas to Formosa Plastics Group (FPG). This has turned trash into gold, and waste gas into company revenue.

Past method	● In order to meet the air separation units of EOG plant, the excess industrial gas after air separation used to be emitted, 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	● The original 7,500MT/month discharged industrial gas has all turned into operating income, adding approximately NT$10 million of benifits every month, contributing to around NT$120 million of revenue each year. ● Since 2020, more than 100TPD of pipelined oxygen and nitrogen respectively have been sold to FPG (Linyuan Plant), which terminates the old air separation units of its own successfully to reduce the 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 originally paid "external waste" into reusable resource products, which can then be utilized in new production processes.

- At the beginning of 2018, OUCC started to recruit manpower from departments such as R&D, engineering design and production, to be devoted to the development of the resource-based process for concentrating potassium iodide (KI).
- After the trial had been completed in October 2018, 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).

Performance of 2020:

1. Economic benefits: totaling NT$31.1 million.

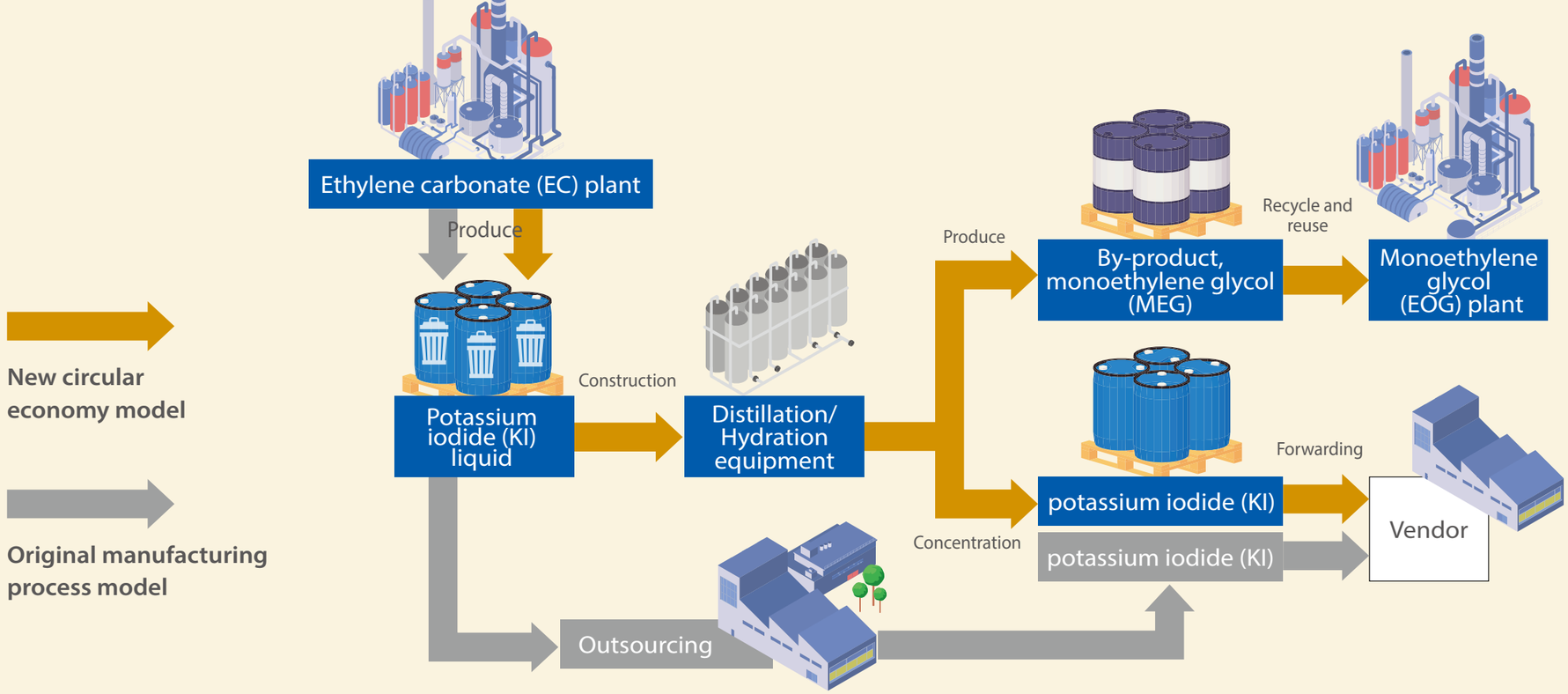
(1) In 2020, OUCC produced about 1,011 metric tons of potassium iodide (KI) waste liquid, and reduced external disposal fee totaling NT$20.22 million.
(2) OUCC produced approx. 93 tons of concentrated EC85 (KI-15), saving the potassium iodide (KI) procurement cost of NT$7.46 million.
(3) OUCC produced approx. 186 tons of byproduct monoethylene glycol (MEG), with the recycle and reuse benefit of NT$3.42 million.

2. Environmental benefits

(1) In 2020, a total of 1,011 tons of waste liquid transportation was reduced, a decrease of 93,601kg-CO_2e.
(2) The mitigative 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 personnel and the public (e.g. causing skin rashes).



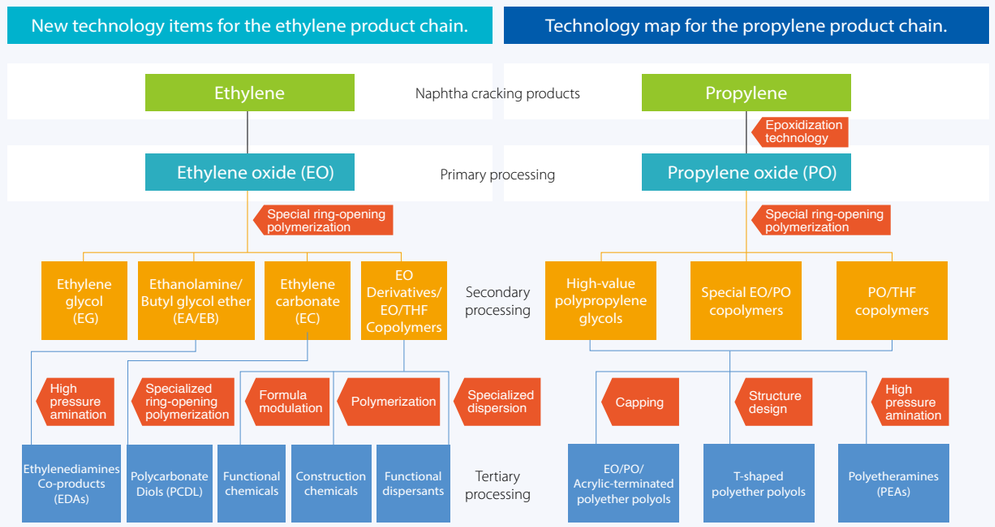
Innovative R&D

Vision of OUCC's Innovative R&D

- Become the helmsman in the petrochemical and specialty chemical industry; accelerate the development of core technology 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 comprises up to 87% of the members holding Bachelor's, Master's, or PhD degrees. The high-tech research fields in which OUCC invested in not only help to expand core industry 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.

Departments including Material Development, Process Development, Quality Control Analysis, and Engineering Design are established under the Technical and R&D Center. In November 2018, the Product Development Department was added to strengthen and accelerate the development of the high value-added new products in terms of advantage enhancement and new value invention. Current research and development domains include:



R&D Performance

With EG as OUCC's prime product and EO as its precursor, the company has since been concentrating on the development and production of EO derivatives, in view of the difficulty in EO storage and transportation. Given the risk of economic circulation of raw material to the bulk such as EG, the development of EOD has been prioritized to substantiate the OUCC's transformation into the specialty chemicals company, based on the premise of the diversification and risk management.

In recent years, the R&D has continued to develop high quality customized EOD/POD products. Among them, PEGR1/ PTGR1 products have the outstanding properties of yellowing resistance and non-explosive polymerization; surfactant products of excellent functions such as moisturization, penetration, emulsification, dispersion and cleansing, the 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 2020, we also actively developed hydrophilic/low surface tension products containing silicone/mineral oil, which were mainly used in defoaming agents and water-repelling agents. Among them, the polyether-modified silicone oil defoaming agent DFA01 developed at the lab passed the 3-month long performance test by the major latex & rubber producer Nantex, among which properties, the defoaming and stability exceeded those of the international brands. The product is currently under mass production test phase.

With the mission in the environmental protection, OUCC has been developing new technologies in synthesis (such as free radical polymerization, esterification, transesterification) and formula modulation in recent years, aiming to decrease energy consumption in the manufacturing process of the terminal products, and simultaneously increase company revenue and profits with high value products. The high-efficiency water-reducing agent WR01 and slump agent SR01 applicable for ready mixed concrete, and coagulation-retardant, high pour point admixture JSP01 successfully developed in conjunction with Ya Tung were rewarded the "2020 Far Eastern Spirit Award" under the Group's synergy category in 2020, and supplied to Ya Tung's Kaohsiung and Xizhi Plants.

Beside, a wide variety of formulated products of daily chemicals/dyeing & finishing –fabric-protecting lotion (DCL series), scaling agent (DSA100), scouring agent (SCA02), soaping agent (SOA01), reductive agent (RCA03), and zinc oxide suppressor with bacteria inhibiting/antibacteria features (DCA series)/sun block agent (SSA03)/oil agent (PUA01) were also successfully developed in 2020. Many of the above have already passed the performance test of major domestic household cleaning producers (such as Nice, Magic Amah, Mekelong, etc.) and the Group's Far Eastern Printing & Dyeing Plants in Guanyin and Vietnam.

On the other hand, in order to expand the product chain derived from raw materials other than ethylene, the R&D has developed the independent technology to produce propylene oxide using propylene as the feedstock, and based on the feedstock of propylene oxide and ethylene oxide to advance further processing technologies, which contain the specialized ring-opening copolymerization tochnology used to produce polymerized products including pure EO, pure PO, EO-PO or EO/PO-THF copolymer series of mono-, bi-, tri-, tetra-, and hexa-functional groups; the high-pressure amination technology of polyether alcohol to produce polyetheramine (PEA) derivatives; the alcohol amine high-pressure amination technology to produce ethyleneamine related products (EDA, AEEA, DETA, TETA, PIP, etc.); and the transesterification polymerization technology to produce polycarbonate diols (PCDL) related products. Through a series of high-value technologies for deep processing to actualize the expansion of product market share of the core product applications as well as the new application domains.

Innovative Technology

Innovative technology	Description
EO/PO derivatives synthesis technology	• EO/PO/EC ring-opening technique: using various raw materials containing active hydrogen (alcohol, acid, phenol, amine, fat) as catalyst, synthesize various polyether products through ring-opening reaction. • Free radical polymerization technique: using this technique to develop functional agents such as polycarboxylate water reducer, collapse, coagulation-retarded, high flow admixtures. • Esterification/Transesterification/polyester technique: using relevant technology to develop functional materials such as fatty acid ester, phosphate ester, sulfate ester, polyester polyether, biodegradable polyester from EO/PO derivatives.
EO/PO derivatives formula modulation technology	Using formula modulation technique, modulate compound formulae for EOD/POD raw materials with features of moisturization, infiltration, emulsification/demulsification, dispersion/condensation, foaming/ defoaming, cleansing/ decontamination and solubilization. The products can be applied to textile dyeing, agricultural chemicals, construction materials, electronic chemicals, personal and household cleaning, all walks of life in all industries.
Propylene epoxidation technology	Develop independent catalyst technology to produce PO, provide downward in EOPO polyether polyol reaction, integrate the product chain.
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	Synthesize various types of polyether amine compounds to be used in epoxy resin, PU and polyamide fiber industries.
Alcohol amine amination technology	Synthesize ethylenediamine, diethylenetriamine, aminoethylethanolamine, piperazine co-products, which are applicable to resin admixture, electroplating, pharmaceutical, agricultural, textile, papermaking, and solvent industries.
Transesterification polymerization technology	Polycarbonate diols (PCDL) related products are used in the soft segment composition of molecular structures for polyurethane (PU) to improve PU's softness and resilience.







Innovative Product

Category	Subject	Contents
EOD/POD	Surfactants	• 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 consumable chemicals
	Purified MPEG/PEG	• 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 domestic use
EOD/POD Derivatives	Concrete admixtures	• The concrete admixture refers to a substance which when added to a concrete mix improves the properties of the concrete. Its functions mainly include: water reducer, slump agent, retarder, accelerator, and an air-entraining agent • 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 • Current research delves into the development of poly-carboxylic acid as a super water-reducing agent and slump agent
	Pesticide emulsifiers	• Develop non-ionic emulsifiers to be used as herbicides (such as pelargonic acid), insecticides (such as sucrose ester, neem oil)
	Daily chemicals/industrial detergents	• Develop daily-use chemical agents with hydrophilic and soft, moisture-absorbing and quick-drying, antibacterial and anti-mite, and cooling features, 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	• Develop functional agents such as scouring, soaping, reduction, dye dispersion, and hydrophilic softening for post-finishing in textile dyeing processes
Polyetheramine	Monoamines, diamines, polyamine and polyetheramine derivatives	• The only company in Taiwan to possess direct reductive amination technology; the value of the product from deep processing of polyether product series can be further increased • Polyetheramine is an amine-terminated molecule with a polyether skeleton as its main chain. It has features including low viscosity, high permeability, and excellent resistance to heat and yellowing • It is mainly used in high performance composite materials, polyurea, cement additives, epoxy resin for floorings, coatings and accessories
Ethanolamine reductive amination co-products	Ethylenediamine, diethylenetriamine, aminoethylethanolamine, piperazine and related co-products	• The only company in Taiwan to possess direct reductive amination technology; the value of the product from deep processing of ethanolamine product series can be further increased • The main items are ethylenediamine, and diethylenetriamine, aminoethylethanolamine, piperazine and related co-products produced from itself and ethanolamine or through self-coupling, epoxidation or polymerization • Can be applied to resin admixture, electroplating, pharmaceutical, agricultural, textile, papermaking, and solvent industries
PU Raw Materials	EOPO polyether polyols	• Polyetheramine has a wider range of adjustable molecular weight than the traditional polyether polyols. It has features such as low unsaturation, low VOC, as well as uniform molecular weight distribution • Used in polyurethane (PU) polymer materials to increase the upper molecular weight limit, improve foam stability, withstand mechanical stress and increase material stiffness
	Polycarbonate diols (PCDL)	• Improve the softness and resilience of PU

R&D Investment

In order to continue to provide more customized, high-quality products to serve the customers, and maintain as a diversified and sustainable company, OUCC increases annual investments in R&D from the current development basis. We even actively sought strategic collaboration opportunities with internationally renowned companies to satisfy the needs of more customers. The investment subsidy in 2020 totaled NT$2.5 million.

R&D Investment

	Unit	2018	2019	2020
R&D amount	Million (NT$)	160	161	150
Total annual revenue	Million (NT$)	14,620	11,763	9,799
Ratio	%	1.09	1.4	1.5

Note: Individual operating income

With the R&D Center establishment approved by MOEA High-Value Petrochemical Industry Promotion Project, and the government approval of the Company's annual investment tax credit proposals, OUCC has been on the substantial move towards the high value-added industry. Additionally, in order to enforce research and innovative capabilities, we also invest corporate resources and collaborate with relevant R&D units to develop various technologies, and create the new model of green refine chemicals.

2020 R&D Collaborations

Type	Research Plan/Unit	Description
Equipment	Three sets of automated fixated continuous production equipment	Used in catalyst selection, tests of catalyst lives for producing polyetheramine and ethyleneamine, to be used as the evaluation basis for the development and OEM of the catalyst and the establishment of mass-production plant
	Gas Chromatography (GC)	Used for impurity and purity analysis in EG processing segment
	UPLCMS Liquid chromatography mass spectrometry	Used for EO and PO distribution and molecular quantity data for EOD products (PEG series, all EO- or PO-added products)
	UV-Vis, the UV-visible spectrometry	Used for impurity analysis of trace byproduct in EG products, such as esters, acids, aldehydes, as well as water quality analysis in public areas of the EG plant
	Distillation analyzer	Used for distillation temperature analysis of MEG, DEG and TEG end products
Industry academy cooperation	The study of cyclization or active monomers on polyester modification	• The new polyester (TBC-X, XBC, and TEBC) synthesized can be used as polyester raw materials in fibers, film bags, or sheet plate products • Upon comparing the new polyester with commercial PBAT on tensile strength, melting point or biodegradability, it showed the commercialization potential, especially the new polyester has the application value of spinnability or better hardness after hardening • The new polyester uses OUCC's esterified substance (PMBHET), which are used in fibers coating film, film (sheets), or spinned fibers (commercial PBAT equipped with no spinnable feature); in the future, recycled PET can also be used to manufacture BHET for the use as polyester raw material

Product Development: Specialty Polyether Polyol

With the increase in shale gas production in the United States after 2009, the supply of propane is loose and prices are low, which have had a profound impact on the structure of the petrochemical industry. OUCC has invested in the development and production of specialty polyether polyol series (including ethylene oxide/ propylene oxide) to strengthen establishment of the propylene product tree.

Master Key Technologies and Obtained Multi-National Patents

As catalyst holds the key technology to the production of specialty polyether polyol series, OUCC has completed the development of such key technology and obtained multi-national patents. In addition, to increase product diversification, a number of technologies to synthesize specialty polyether polyol series have been developed and tested by downstream customers with positive feedback.

Production Process Development of 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 ability and invested in the development of self-owned technology for PO production. The aim is to reduce production cost of the polypropylene glycol series and increase the diversity of the PO derivatives.

Circular Economy and Global Patent

OUCC uses the CHPPO process that best meets the concept of circular economy as the main technology for producing propylene oxide.The most important key to this process technology is "catalyst technology" provided by a Japanese supplier.

In response to this, OUCC has exerted its innovative R&D ability to develope 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 catalyst developed by OUCC has excellent stability. Under a continuous reaction test, the catalytic activity does not tend to decrease over long periods of continuous on-and-off operation tests (>1,000 hours). Furthermore, OUCC has also established related process technology in response to CHPPO dehydration and hydrogenation. The current conversion and selectivity of dehydration-hydrogenation are more than 99% in compliance with the threshold for commercialization.

Environmental Innovation - Dyeing Agent with Low Foam and High Biomass

In recent years, biomass materials that are actively promoted around the world have been the extremely important renewable resources. Just like renewable energy, it has environmental characteristics as the raw materials usually come from waste, which coincide with the environmentally friendly characteristics of recycle and reuse, a key point for modern petrochemical industry to enter the future biomass industry.

Due to this reason, OUCC is actively engaging in such trend. In the application of dyeing agents, biomass materials is combined to develop scouring, soaping, reduction, and dye dispersion agents that are of low foam and high biomass with the assistance of the Far Eastern Group's textile plant for verification.

Of which, the scouring agent SCA02, soaping agent SOA01 and reduction agent RCA02 underwent Beta Analytic Testing Laboratory analysis (ASTM D6866), and results show the biomass contents to be 34%, 43%, and 54% respectively. With environmental protection thinking, OUCC develops products that are environmentally friendly.

Development of High-value Specialty Chemicals

OUCC actively developed specialty chemicals, amidst which hydrophilic/low surface tension products containing silicone/mineral oil are mainly used in defoaming agents and water-repelling agents. Currently, the polyether-modified silicone oil defoaming agent DFA01 developed in OUCC's lab had passed the 3-months long performance test by the major latex & rubber producer Nantex; the defoaming and stability properties exceed those of the international brands.

Beside, we developed formulated daily chemicals/dyeing & finishing – fabric protecting lotion (DCL series), scaling agent (DSA100), scouring agent (SCA02), soaping agent (SOA01), reduction agent (RCA03), and zinc oxide suppressor with bacterial inhibiting features (DCA series)/sun block agent (SSA03)/oil agent (PUA01) in 2020; most of them have already passed the performance test of the major domestic household cleaning producers (such as Nice, Magic Amah, Mekelong, etc.) and the Group's Far Eastern Printing & Dyeing Plants in Guanyin and Vietnam.

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. Through active development in new synthesis (such as free radical polymerization, esterification, transesterification) and formulated modulation techniques, the company 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 in 2019, which can be widely applied to the construction industry in the future.

This self-owned synthesizing technique can effectively reduce energy consumption. 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 CO_2 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 are expected to enter the mass production phase in 2021 by bringing high-value fine chemicals into our lifestyles, and create more application values.

Reductive Amination Technique

Polyether alcohol-based reductive amination technique: this technique includes catalyst technology and processing technology, and is used for the synthesis of various polyetheramine products. This technique underwent a whole year of verification to confirm its commercial value. The construction of the mass production plant is underway, and is expected to complete by 2021.

Mix with The Cement Industry, Create A Low Carbon Industry Chain

Ya Tung produces around 5 million m^3 of ready mixed concrete each year, which require approx. 20,000 tons of chemical additives in the process, produced with main feedstock the polycarboxylate polymer (PCE) of high molecular, which is created through the reactive processing of HPEG monomer, and OUCC is currently the only HPEG monomer producer in Taiwan. In the past, the product used to be sold to large chemical vendors, who would then supply it to the downstream cement and construction industries after reaction processing and compounding into chemical agent.

In such industry chain, the chemical vendor can easily effect the concrete quality and the inherent cost increase of cement and construction industry, leading to both tangible and intangible losses. In view of this, OUCC decided to collaborate with Ya Tung to jointly develop chemical agents for vertical integration of the industry chain.

Resources sharing, strengths complementary

The concrete quality at the construction site depends on the quality of sand and gravel and dosage of chemical agent, therefore, the "standardization of admixture and quality" is of the highest priority. After close discussions and hundreds of on-site tests by both teams, OUCC redefined the core active ingredient of the chemical agent, and established a precise production process and scientific formula modulation technique. Through quantified indicators, OUCC also ensured the chemical agent's quality stability. At the same time, Ya Tung began the development of "quantified sand and gravel quality" technology to predetermine the dosage of the chemical agent. This way, the dosage can be precisely changed according to the quality of the sand and gravel, avoiding unnecessary cost wastage caused by the traditional method of relying on empirical adjustment.

Additionally, considering the inconsistent quality of the sand and gravel in Taiwan, and that fly ash is easily generated during the construction process, influencing the appearance of the concrete, OUCC utilized the processing techniques for specialized chemical raw materials, combining with the abundant experiences in production and use of concrete materials from Ya Tung, to further develope the concrete texture improver, defoamer and other functional agents to ensure the smooth appearance of the concrete for Ya Tung.

Vertical integration, diversified benefits

With the team's efforts, the new G model high-performance water-reducing coagulation-retardant (JSP01) and the high-flow agent JSP02 all passed the chemical agent technical evaluations in Northern, Middle, and Southern Taiwan in 2020; the performance was outstanding in each of the features. Among them, the G model high-performance water-reducing coagulation-retardant (JSP01) has been successfully introducing into Ya Tung's construction projects since 2020, which verified the feasibility of cross-industry application integration. In the future, OUCC will continue to collect all kinds of environmental factor data, quantification statistics on the compilation of sand and gravel characteristics, integrate with on-site experiences, then based on the big data analysis to assist Ya Tung to quickly adapt to the various conditions of the materials, and produce good quality concrete products.

In addition to increasing product value and decreasing costs in this collaboration, OUCC's one-stop production from integrating raw materials to end product also effectively reduced the production cycle and energy consumption. Taking the production of 1,000 tons of G model high-performance water-reducing coagulation-retardant (JSP01) for example, it can save around 8,000 kWh of power and 32 tons of steam, which is equivalent to reducing 12 tons of carbon emissions. If we add in the reduction of packaging materials and transportation energy-saving benefits, the carbon reduction effect is even more significant.

Through cross-domain collaboration of both OUCC and Ya Tung, OUCC was able to develop chemical agents and functional additives used in concrete to satisfy end customers and market needs, setting a milestone for entering the domain of construction chemicals. In the future, OUCC looks forward to advance upon the concrete applications market, so as to fulfill the design requirements of the industry. For Ya Tung, the increased competitiveness of overall concrete products advantaged its expansion in market share. And, the collaboration between two strong allies concurrently increased the Group's overall revenues, setting a new model of group synthesis.

Respect Intellectual Property Rights

We value the protection of technology and intellectual property rights (IPR). With regard to the research, development as well as purchase of the innovative technology, the "Procedure for Outsourcing Processing Technology" is formulated. Before it is kicked off, a new project will be initiated and a project leader assigned. A first edition of the formal technical data and relevant support will be provided to the project team by the outsourced supplier, and then be allocated by the project leader to the production, technical, maintenance and other units, to complete the initial distribution signing process.

The project leader then convenes a project kickoff meeting, executes the project, and has the outsourced manufacturing process technical data distributed to production, technical, maintenance, and other relevant units. The contract will include protection clauses for IPR, patents, copyrights and confidentiality to ensure the integrity of technology rights, and to strengthen core business advantage as well as sustainable competitiveness.

Green Chemical and Smart Manufacturing

Over the years, OUCC has been the pioneer in Taiwan's petrochemical industry on product diversification transformation, investment into green energy industry, and innovation of products and technology. It is believed that the focus on green chemistry will promote new development of the petrochemical industry, as well as help solve sustainable issues such as economy, resources, and the environment.

Facing Industry 4.0, Artificial Intelligence, IoT, 5G, and big data, OUCC pursues the concept of smart manufacturing, using technology to optimize and enhance the productivity of traditional industries. OUCC shall maintain innovative and forward-looking attitude, continuing the research in green chemistry and connect to international intelligent manufacturing, using environmental protection and technology to realize the vision of sustainable development of the chemical industry. OUCC has adopted a "stable, safe and environmentally friendly" approach to product development. Applying the concept of the life cycle, the possible effects of the product on health, safety and the environment have been taken into account, aiming to reduce all risks. The green chemical strategies are set to help with the sustainable development of the industry.

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 must be encouraged to strive for the resource consumption reduction 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.

OUCC Smart Manufacturing, Intelligent Chemical Engineering Talents Nurturing

Take the supply of liqued gas products as example, OUCC actively integrates with "IoT" by implementing smart logistics and services. The company establishes a storage tank monitoring system on the client end, dynamically analyzing customer's usage status, and automatically scheduling shipping arrangement, which promotes supply chain information transparency and horizontal integration, provides the fastest response services, and strengthens customer loyalty.

At the same time, OUCC is training a new generation of AI management talents. Recently, over 10 personnel with different fields of expertise have been sent to Taiwan AI Academy to learn AI-related knowledge and skills. Through practical operations, exchanges and discussions with peers by integrating diversified aspects including manufacturing, R&D, technology, construction, planning, information, and human resources, the talents bring up operational issues to the academy, and bring solutions back to the company. The talents utilize AI technology to increase operational efficiency, decrease production risks, and create new manufacturing value. In this new age of smart manufacturing, OUCC occupies strategically advantageous positions, and grasp onto incoming opportunities.

Technology Integration, Independently Developed Operational Intelligence System

OUCC is committed to digital transformation. It introduced the SAP Analytics Cloud (SAP) in 2020, successfully bringing together BI business intelligence, strategic planning and predictive analysis into one simple cloud platform, using the potential of information effectively to fulfill various types of analysis requirements for decision makers or each department all at once, reconstructing visual analysis, promptly formulating an effective decision, and providing precise insights to overcome cognitive biases.

Through the powerful analytical function of SAC, it allowed non-IT background management and employee to quickly grasp the power of system learning. It allowed each staff the ability to make efficient and reliable decisions without help from the IT department, or provided professional training in data science to make each decision by serial processes of preparation, integration, analyzation, and action. The case successfully went online in November 2020 with the hard work from the project team, and received the SAP ESAC (Enterprise Support Advisory Council) Excellence Award in 2020, which marked a new milestone toward the goal of digital transformation.

COVID-19 Pandemic Response Mechanism - Development of EIP Platform

As COVID-19 ravaged throughout 2020, OUCC developed the enterprise information platform (EIP), providing functions including clock-in and clock-out, message bulletin board, official document signing system and health system, which can be logged in through the computer or mobile phone.

During the pandemic period, employees are required to log into the health system to report their health status when they come into work daily; OUCC was able to protect and track the employees' health through this way. Through the EIP system, all forms have become digitized; a total of 6,537 documents were completed using the digitized process in 2020, decreasing the greenhouse gas emissions.

ETHICAL GOVERNANCE

2020 Sustainable Performance

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

- The result of the Board of Directors' performance appraisal is **"Above standard"**
- Selected by Taiwan Index Co., Ltd. to be included in the "**FTSE4Good TIP Taiwan ESG Index**"

FTSE4Good TIP Taiwan ESG Index

- Annual operating income of NT$**9.7989** billion
- Enhance information security, establish a remote backup facility, and remote login to the terminal that requires a two-factor authentication according to **Business Continuity Planning (BCP)**
- The company scored **94.56** in TWSE Governance Evaluation in 2020, which falls into the raking interval of 6~20% of listed companies

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: 341
- Manufacturing location: Kaohsiung & Yangzhou

Note: The OUCC production base for relative investment locates in Yangzhou, China.

OUCC was founded in 1975 and traded on the Taiwan Stock Exchange in 1987 with a capital stock of NT$8.86 billion, and has plants in Kaohsiung Linyuan and China Yangzhou. The OUCC is engaged in professional petrochemical business within the Far Eastern Group.

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

Product	Plants	Annual Production Capacity (10,000 tons)
EG	Linyuan	40
	Yangzhou	49
GAS	Linyuan	72
	Yangzhou	34
Special chemistry	Linyuan	13
	Yangzhou	2.3

Note: Please refer to 2020 Annual Report p.62 for the production value in the past 2 years.

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

The Sustainable Development Philosophy of OUCC

In response to key and major sustainability issues, OUCC has established various sustainability strategies and set qualitative and quantitative evaluation indicators to ensure that short-, medium- and long-term project actions can be concretely implemented, reduce sustainability risks, and move towards sustainability.

E

- Committed to improving process design, pursuing green production, investing in energy efficiency improvement and waste recycling equipment, 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, completed the transfer procedures in 2018, actively promoting various pollution prevention improvements and striving to reduce the risk of pollution emissions.
- OUCC has also introduced the ISO 50001 energy management system for energy saving. And through innovative R&D, the circular economy model was integrated to strengthen the momentum of green industry.

S

- With the mission of fulfilling CSR, OUCC values the importance of industrial safety, health, environmental protection and human rights, and have introduced "OHSAS 18001 Occupational Health and Safety Management System", which was successfully migrated to ISO 45001:2018 certificate in 2020. We are committed to implementing and complying with various safety systems to build a friendly and safe working environment.
- The Linyuan Plant was awarded the recognition of "4.91 Million Accident-Free Man-Hours Record" in 2020, and continued to strive towards the goal of "Five Million Accident-Free Man-Hours Record" in 2021.
- 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.

G

- 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 sharehoders' lawful rights as well as others stackholders' interests, OUCC implements the robust governance, improves business operation to maximize shareholders' interests.
- For the continueous strengthening in corporate governance and management system, OUCC's Corporate Governance Evaluation in 2020 scored 94.56, at the ranking of the top 6%-20% of the listed companies. The corporate governance officer will be installed in 2021 accountable for the work promotion.
- Adherence to the OUCC spirit of entrepreneurship – "sincerity, diligence, thrift, prudence, and innovation" to steadily face future challenges and achieve sustainability.

The Chronicles of OUCC

1975
The company was authorized for incorporation with a share capital of NT$569,250 thousand.

1978
thylene glycol plant construction completed.

1987
Stock approved for sale.

1992
Completed the construction of the ethylene glycol wastewater treatment plant in compliance with national standards.

1998
Obtained ISO 14001, and achieved a record of 2 million consecutive incident-free man-hours.

2000
Implemented an enterprise resource planning system (ERP).

2002
Obtained certifications of ISO 9001 (Quality Management System) and OHSAS 18001 (Occupational Health and Safety Management System).

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

2005
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 runs.

2009
Won the "National Industrial Zone Safety Partnership Excellence Award - Premium Business Unit" medal from the Council of Labor Affairs, Executive Yuan.

2012
- Completed the Oriental Petrochemical (Yangzhou) Corp. ethylene oxide derivatives plant with an annual capacity of 60,000 tons.
- Investment Commission MOEA approved PPL investment in Far Eastern Union Petrochemical (Yangzhou) Ltd.

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 CO_2 plant III at Linyuan site with an annual output of 40,000 tons.

2017
Completed the reconstructure of the ethanolamine plant I into an ethylene glycol monobutyl ether plant with an annual output of 20,000 tons.

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 Export/Import 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.

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

2020
- Passed and obtained ISO 50001:2018 Energy Management System certification.
- Passed ISO 45001:2018 Occupational Health and Safety Management System verification, and obtained the certificate.
- Received the SGS CSR Awards - 2020 Sustainable Elite Award
- Rewarded the 2019 CSR report award by TCSA

Financial Performance

In recent years, as the petrochemical industry is greatly affected by the dramatic changes in the global economic environment, OUCC not only continuously expands production and looks for low-cost energy and raw materials supply, but also actively develops product transformation. As the main product, EG , was affected by the slowdown of downstream demand in 2020, and the overall industry's oversupply led to the weak product price.

Fortunately, OUCC has also been focusing on improving basic competitiveness and transforming high-valued products as its main operating principles. This strategy has seen initial results. With the relentless efforts of all our colleagues in 2020, OUCC gained an operating income of NT$9,798,912 thousand, decreasing 17% compared to 2019. The net loss before tax was NT$1,080,016 thousand; the net loss after tax was NT$1,064,698 thousand. With the approval from the Board of Directors, no cash dividends are to be issued.

Unit: NT$ Thousand

	2018	2019	2020
Operating income	14,619,729	11,762,636	9,798,912
Operating cost	12,567,843	10,951,780	9,015,310
Staff salaries and benefits	542,770	472,726	406,712
Dividend paid to shareholders	1,549,980	1,549,981	265,711
Dividend paid to government	366,197	206,228	45,369
Community Investment	5,859	1,768	1,590
Economic value retained	1,330,899	53,101	7,112
Total debt	9,050,534	11,023,437	10,608,706
Total asset	**24,017,716**	**24,547,442**	**22,712,675**

Note: 1. The information from the above form is obtained from unconsolidated financial reports.
2. Please refer to 2020 Annual Report p.62 for annual net sale and sale volume.
3. Please refer to 2020 Annual Report p.47 for shareholder structure.

Open and Transparent Communication Channel

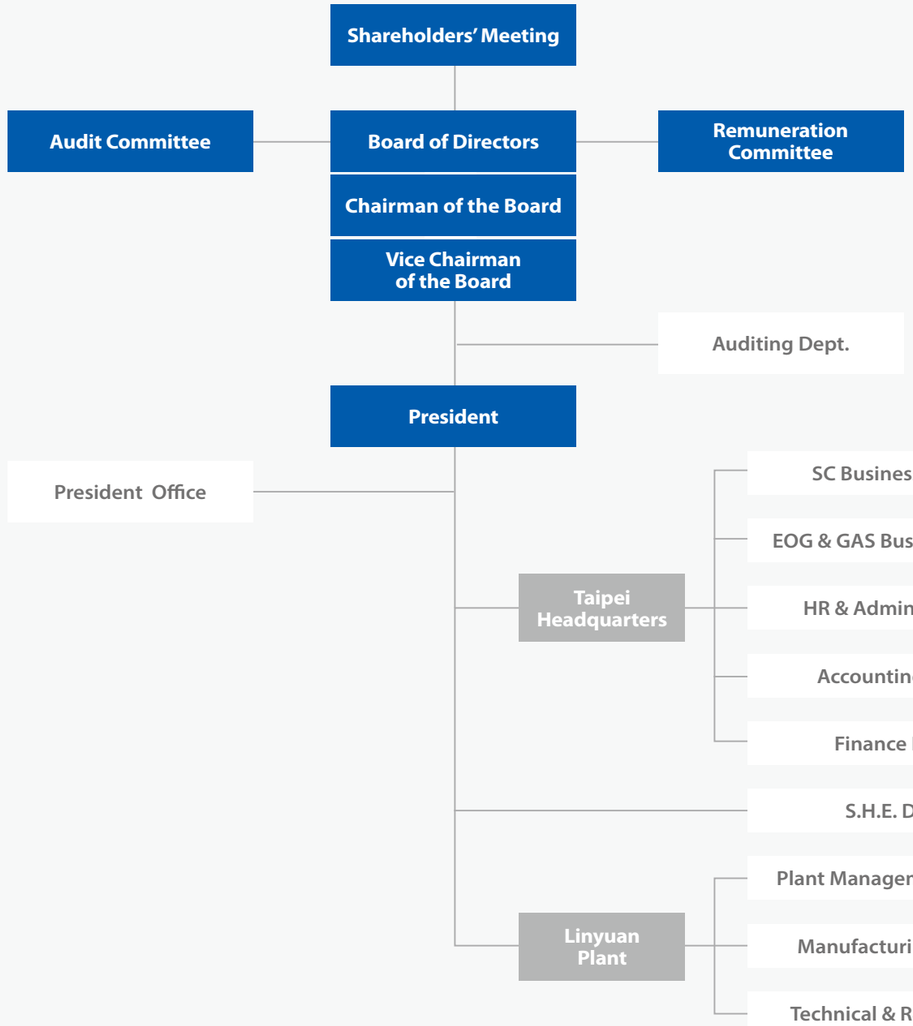
The OUCC complies with the information disclosure regulations by publishing the financial, business, and corporate governance-related information on the company website, and communicating with stakeholders through channels such as investment seminars, shareholders' meeting, and investor relations and the like. The OUCC's diversified communication channels include:

1. The suggestions or questions raised by the shareholders, in addition to being dealt with by the President Office, can also be attended by the spokesman and deputy spokesman of the company, or by the "Oriental Securities Corporation" that provides stock services to the OUCC. Periodically, the investors meetings will be held, and relevant information be 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 Finance Department	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. Hsieh	02-2719-3333#331

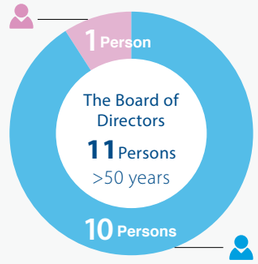
Operational Structure



Board

The Board of Directors being the highest governance unit comprises 11 Directors, including 3 Independent Directors, on the 15th term , which term of office is three years starting June 8, 2018.

The Directors of OUCC all exercise their powers in accordance with the company law and the regulations, the rules of procedure for board meetings, and other relevant laws and 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 strengthen the niche of OUCC's sustainable management.



Skills and diversification	● The term of office of the Board of Directors is three years. The candidate nomination system has been adopted for the member nomination and election. Education and experience of the candidates are evaluated in accordance with the "Regulations governing the Election of Directors" and the "Corporate Governance Principles", 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	The result of the Board of Directors' performance appraisal is "Above standard."
Board of Director's meetings	Four meetings of the Board of Directors were held during 2020 to set up the sustainable management objectives of OUCC and relative decision making.
Professional training seminars	Directors, and Managerial Officers of OUCC shall participate in external education and training courses on topics for corporate governance on a regular basis. In 2020, the courses included the "Operational Practices of the Board of Directors and Corporate Governance Seminar" and "Operational Practices of the Audit Committee". Please refer to page 36-37 of the 2020 Annual Report.
Major Proposals	● Merger of OUCC's subsidiary companies PPL and OUCC (B) in the reinvestment business in China. ● Project budget amendments for Linyuan Plant's new specialty chemical plants and spherical tank for liquid ammonium. ● OUCC re-stated the completion for the compilation of financial statement independently. Please refer to page 40-41 of the 2020 Annual Report.

Remuneration Link to CSR 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 2020, 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 OUCC procedure 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, corporate social responsibility and development trends. 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.

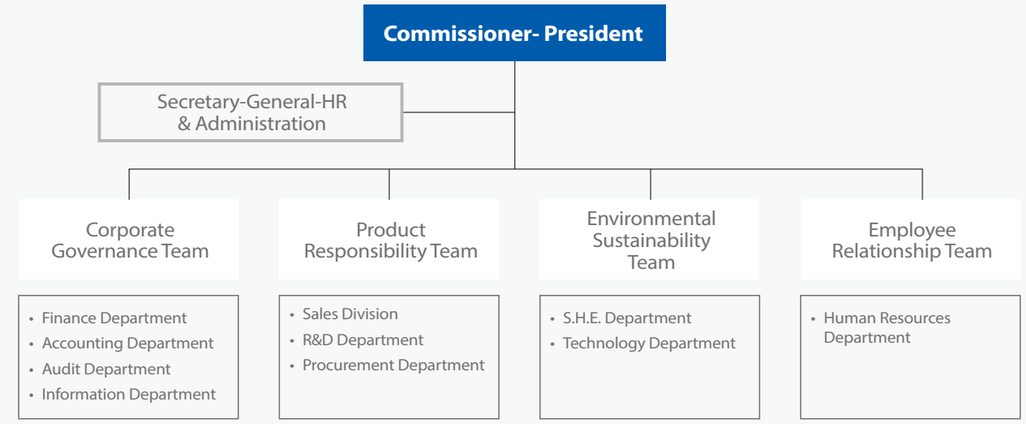
The operations and financial arrangements of the OUCC are independent from those of affiliated companies. All interaction with them is handled in accordance with the "Regulations Governing the Transactions of Related Parties," "Procedures for the Acquisition and Disposal of Assets," "Procedures for the 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.

Corporate Social Responsibility Committee

In order to effectively coordinate and manage various CSR affairs, OUCC established a "CSR Committee". The President was regularly appointed as the Commissioner responsible for final decision making, action plan review, and approval of the final reports. The 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 each department, Assistant Vice-President or Senior Manager, are appointed to the CSR Committee. Top management is responsible for the operation of the committee and formulation of CSR relevant policies, action plans, and cross-departmental coordination. In principle, the CSR Committee holds regular meetings as well as extraordinary meetings for any specific CSR issue that requires an immediate response. All the management processes, results of assessments and general CSR information are communicated to stakeholders through the company CSR website.

CSR Committee Organizational Structure



OUCC Received the "2020 SGS CSR Awards - 2020 Sustainable Elite Award"

OUCC is committed to sustainable development and performed outstandingly; it received the honor of SGS's "CSR Awards - Annual Sustainable Elite Award" in 2020. OUCC shared the spotlight with the Group's Far Eastern Department Store Co., Ltd., Asia Cement Corporation, and FE SOGO Department Store Co., Ltd.

In order to commend outstanding enterprises in the introduction of international standards and CSR, SGS began hosting "SGS CSR Award" in 2019. The evaluation was conducted through internal recommendation, international and domestic awards ratings, and referencing the evaluation scores of the first 35% of corporate governance. The review committee then selects enterprises with outstanding performance in the domain of sustainability, and award with the "Annual Sustainable Elite Award".

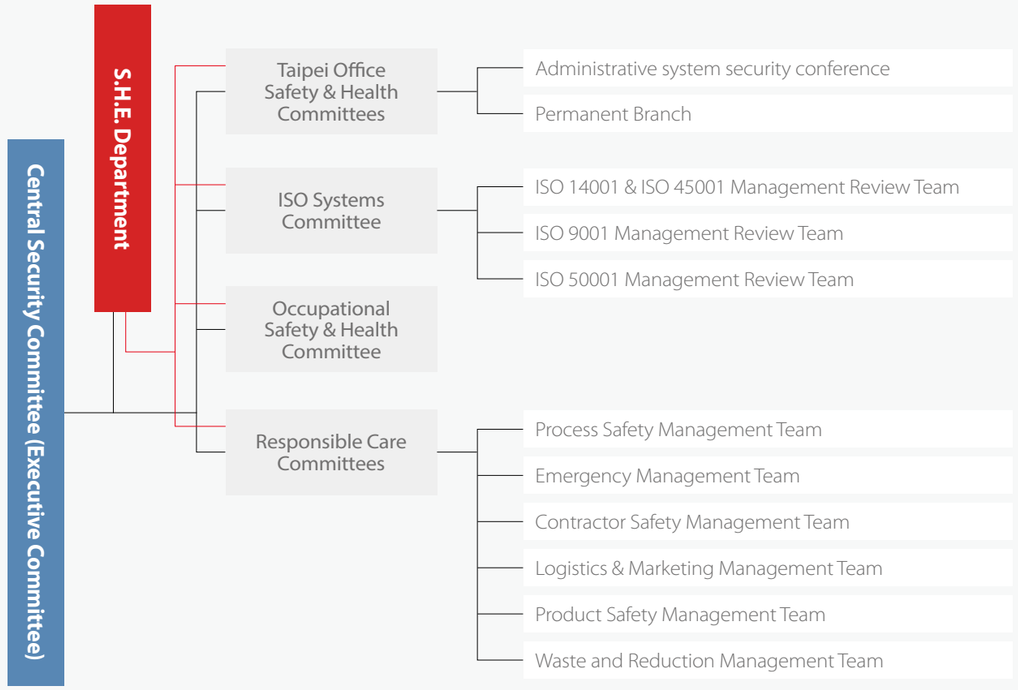
As for the even more difficult "Outstanding Sustainability Award", 10 enterprises from 5 categories who have cultivated in sustainability and perform with excellence will be chosen by a review committee made of cross-domain experts after the phase 1 selection and phase 2 preliminary rounds. OUCC's efforts in CSR are well-recognized.

Risk Management

"Comprehensive risk strategies and steadfast operations" are important parts of thinking on OUCC's sustainable development. In addition to overall management planning for risks and setting up the general responsive strategies and procedures, individual units will also make their own appropriate plans. Such precautionary planning will ensure the impact of an untoward event on company operation will be minimized through regular testing and drills.

Risk Management Organization

To ensure a balance between business operation and risk management, we have established a sound management and organizational system. Responsive measures can be taken for all business operation risks starting from the management level to ensure business stability and reliability.



Asset Risk Responsive Measures

- Property risk assessment: External professional loss-prevention insurance company personnel are invited for annual visits to the plant to work with the manufacturing and environmental safety personnel to jointly assess the categories of property risk and uncover potentially dangerous situations. Corrective action for any controllable risks can be adopted in advance while loss-prevention technology be introduced to prevent the occurrence of dangerous situations.
- Insurance planning: The transfer of unavoidable risk and force majeure by the acquisition of the necessary insurance in proportion to an assessment of the degree of risk to formulate insurance strategy as well as terms and conditions.
- Currently, the company 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 chaired by the President. The Committee Members regularly review and assess customer credit status and the credit lines granted. Customer's sales credit as well as accounts receivables are examined regularly. 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, in addition to adjusting the interest rate structure for short-term operation, OUCC has tried to minimize the impact of future economic changes that might cause a rise in interest rate, and the consequent increase in cost, by having the mid-term and long-term interest rate locked by using fixed interest rate financing instruments.
- The company will continue 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

The impact of climate change on company operations has become a vital concern for global companies. In recent years, the entire planet has been affected by increasingly severe and more extreme climate. Floods and draughts, typhoons, and all kinds of other natural disasters have struck every corner of the globe, bringing the impacts such as compound disasters, water shortages, and devastating infrastructural damage. To gain a better understanding of the impact of extreme weather, in 2018 OUCC completed a questionnaire from the Industrial Development Bureau, Ministry of Economic Affairs, addressing extreme climate issues such as "flooding", "water shortage", "high temperature" and "power shortage". A preliminary assessment of the level and extent of the impact of these issues on the manufacturing industry was then conducted.

In addition, OUCC also adopted the "Recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD)" framework since 2019 to measure and evaluate the impact of climate change, and draft an energy resource usage strategy that would save energy and reduce carbon emission, and mitigate the impact of extreme climate and the consequential forces on the plants. Also, more investment is dealt to improve the energy consumption of manufacturing processes, which is also part of the action plan of OUCC in response to the climate change.

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

Framework	Disclosures
Governance	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 CSR committee meeting. The findings are reported to the Board of Directors for the evaluation of corporate social responsibility performance
	• The Environmental Sustainability Team was set up under the CSR Committee to assess the risks and opportunities arising from related climate issues through the company's risk management process • In 2008, a 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 to evaluate and plan accordingly
Strategy	According to the existing target milestone, the assessment and analysis of the risks and opportunities related to climate change are divided into short-term (2021), medium-term (till 2026) and long-term (after 2026)
	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"
Risk Management	• 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
	The CSR Environmental Sustainability Team and the "Energy Conservation 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
	The CSR Environmental Sustainability Team and the "Energy Conservation 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
Metrics and targets	Five 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
	Scope 1 and Scope 2 emissions have been verified in accordance with the "ISO 14064-1 Standard", and external verification has been conducted. Plans for Scope 3 emission inventory will commence in 2021
	• 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

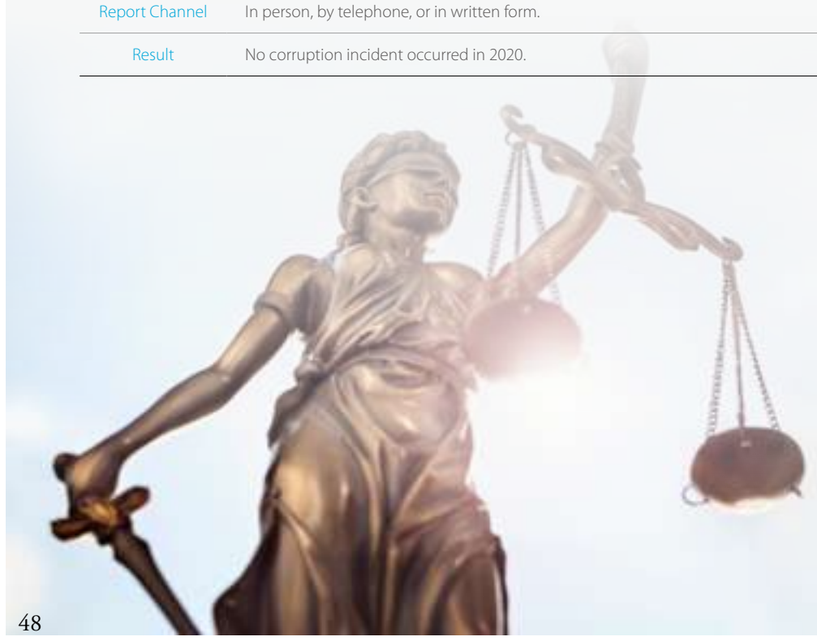
Anti-corruption Mechanism

To improve the stipulation, supervision, and implementation of best practice in all management policies and precautionary programs, the Directors, Managers, and all employees of OUCC are bound to comply with relevant codes of conduct as published and posted on the company website for communication and advocacy with related stakeholders. The codes of conduct serve to standardize ethical behavior throughout the company that all employees engaged in commercial acts shall not, directly or indirectly, offer, promise, request, or receive any improper benefit, or engage in acts of bad faith, breach of trust or fiduciary duty, or any other illegal conduct.

It is clearly stated in the "Rules of Procedure for Board of Directors Meetings" that all Directors are bound to evade the interest, so that the Board of Directors may fulfill their obligations in good faith and ensure the implementation of a best-practice business principle.

OUCC has multiple communication channels for stakeholders to report the relevant wrongful acts. Should any violation of the regulations for ethical corporate management, it may be reported to the Company's Managerial Officers, Department Heads, and other suitable supervisors with 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 2020, 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, by telephone, or in written form.
Result	No corruption incident occurred in 2020.



Sound Internal Control System

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.

3 main objectives of the internal control system

1. To ensure the effectiveness and efficiency of all operations.
2. The reports should be reliable, timely, transparent and in compliance with all the relevant specifications.
3. All operations comply with the applicable laws and regulations.

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. At the same time, abide by corporate governance code of practice regulations, the appointment and removal, evaluation, salary of audit staff are submitted to the Chair for approval by the audit manager on a regular basis.

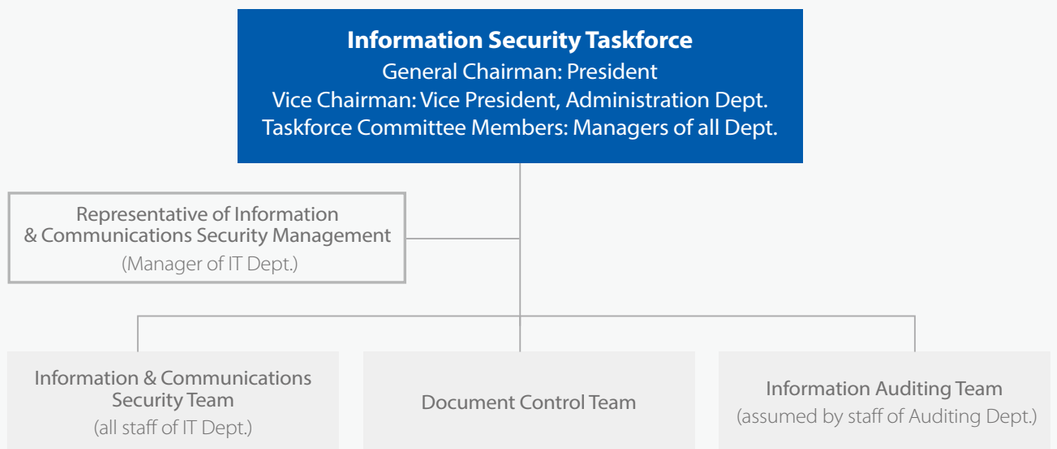
OUCC places high value on CSR related issues, internal control, and the internal audit. The 2020 audit plan included reviews on corporate governance, financial operations, environmental and labor safety, as well as information, R&D and other related operations, which were conducted to ensure company 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. Information Security Organization

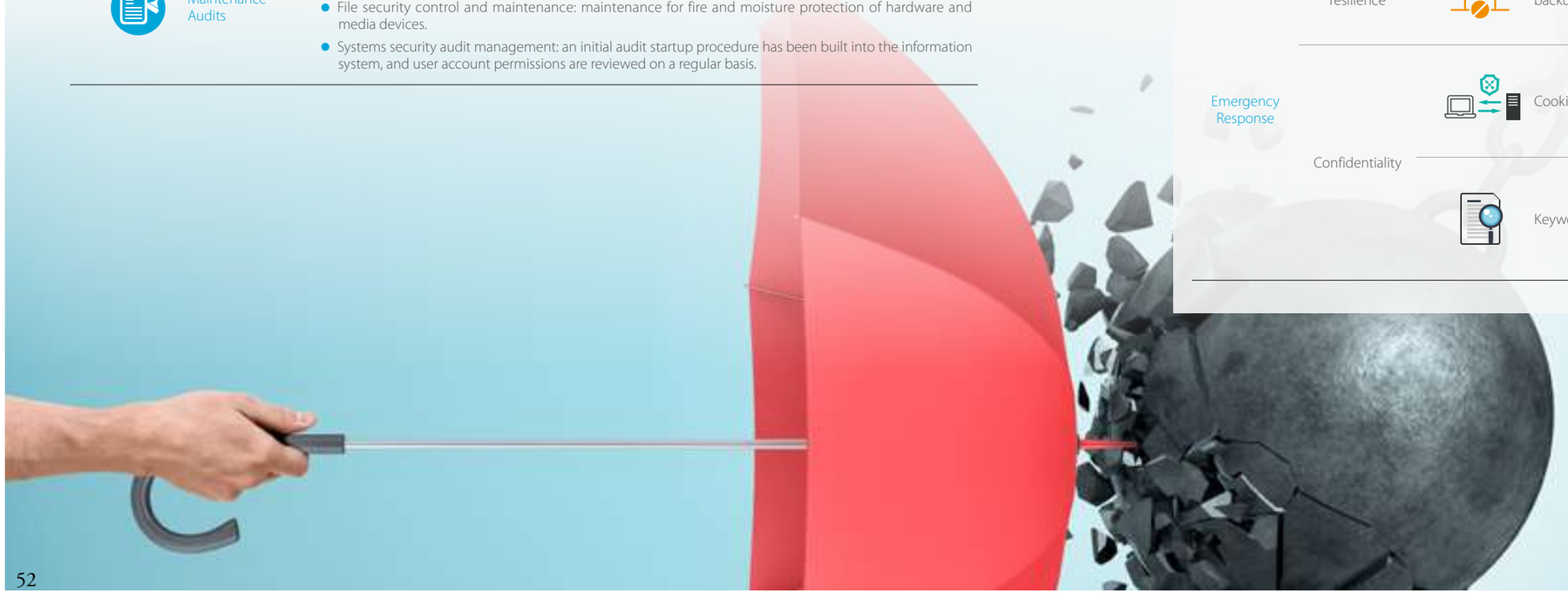
OUCC's risk transfer and contingency strategies include management mechanisms such as risk assessment, risk transfer, emergency response and audit maintenance for proper operation of the information system.



2. Management Approach

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

Risk Assessment	• 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.
Risk Transfer	• Multiple security defenses: these include firewalls, an enterprise Virtual Private Network (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 and be authorized for an application upon completion of the electronic procedure. • Management of hardware devices: OUCC is equiped with uninterruptible power supplies and has inspections of safety control facilities carried out regularly. • Data transmission Lines are set up between Taipei Office and Linyuan Plant: An MPLS 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 applications system is logined 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 opearation. • 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.
Emergency Response	• Backup and restore mechanism: A mutual information 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 achieve continuity of the information system. System operations can be resumed within 4 hours.
Maintenance Audits	• 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

In 2020, necessary steps were taken to strengthen the information security mechanism. The original OUCC application system that allows external suppliers to log in was changed to a direct login procedure through the OUCC official website. 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 addition, 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. This complied with corporate standard specifications, and protected the safety of the customers' online information. SSL certificates were 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	• 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. • OUCC 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	• 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.
	Enhance resilience	Establishment of a remote backup mechanism	• The establishment of a comprehensive remote backup mechanism which consists of a total of four backup processes to enable information from OUCC head office and Kaohsiung Linyuan plant to be simultaneously backed up into two alternative storage locations
Emergency Response	Confidentiality	Cookie Policy Statement	• 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	• Using the new DLP function from Exchange Server 2016, and compare against keywords, dictionaries, regular expression evaluation, and other content inspection to carry out in-depth content analysis and detect contents that violate the structured DLP policy. The sender will be notified accordingly of such violation.

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, implementating, and responding transparently to the issues which are valued can the company truly internalize 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.

OUCC values the suggestions of its stakeholders which provide strength for progress and the core element to sustainable development. It is believed that sustainable development can be achieved through diversified stakeholders' communication, policy planning, and implementation. To further advance in improvement and innovation, the company provides multiple communication channels to corporate customers in response to their requirements in product safety and quality, and to employees, investors, suppliers, and the local community for them to easily voice their opinion and be duly responded.

In 2020, we have identified several 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 122.

Stakeholders' Communication Channels

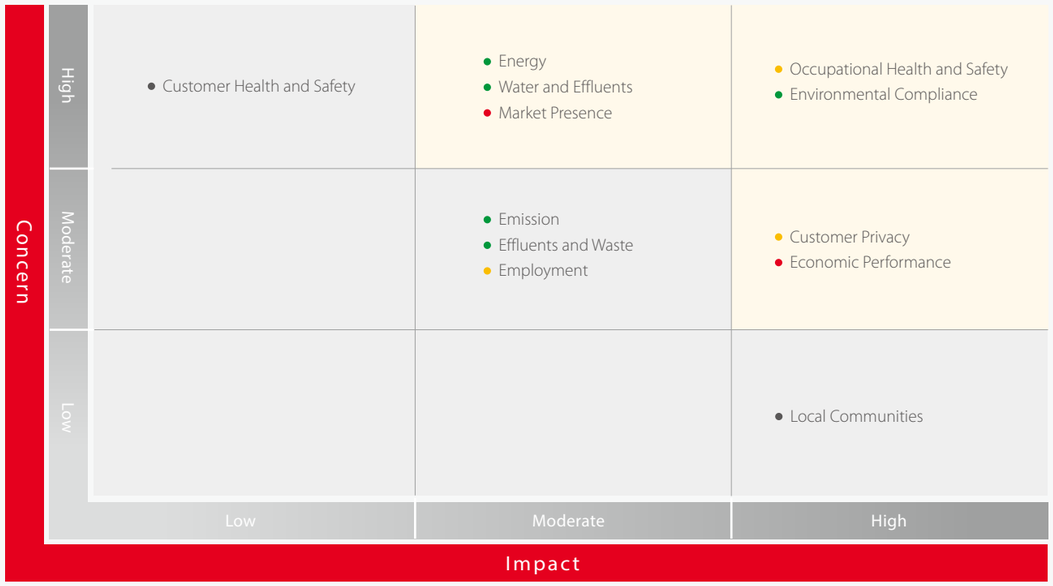
Stakeholder	Meaning for OUCC	The Main Communication Channel and Frequency	Concerned Issues	GRI Material Topic
Shareholders and Investors	The shareholders and investors are OUCC's stockholders, to whom we must be responsible.	1. Shareholders' meeting (annually) 2. Investors conference convened (quarterly) 3. The CSR website and report (annually) 4. Participation in the Corporate investors' forum convened(occasionally) 5. Spokesman hotline and mailbox (occasionally) 6. The company website (permanent) 7. MOPS (permanent)	• Corporate Governance • Industry Trends • Economic Performance • Risk Management • Dividend Policy	• Economic Performance • Market Presence • Energy • Environmental Compliance
Employees	The employees are the foundation to OUCC's sustainable operation, and the driving force of our continuous growth.	1. Employee Welfare Committee (occasionally) 2. Labor-employer meetings (quarterly) 3. Occupational Health & Safety Committee (quarterly) 4. Performance appraisal (annually) 5. Group activity (occasionally) 6. Education training (occasionally) 7. Grievance mail box (permanent) 8. Employee communication (annually)	• Employee Welfare • Work Environment • Labor Rights	• Market Presence • Occupational Health and Safety • Employment
Corporate Customers	Satisfied customers are the key to the development of our business and services.	1. Customer satisfaction survey (annually) 2. E-mail (occasionally) 3. Distribution meeting (occasionally) 4. Customer visitation (occasionally) 5. The company website (permanent) 6. The CSR website and report (annually)	• Industry Trend • Emission • Customer Privacy • Law and Regulation Compliance • Occupational Health and Safety	• Economic Performance • Environmental Compliance • Customer Privacy
Suppliers/ Contractors	We have a number of products and service chains, all of which are dependent on the support from suppliers and contractors.	1. Supplier periodical evaluation (annually) 2. The CSR website and report (annually) 3. Transportation meeting (occasionally) 4. Supplier/Contractor safety meeting (monthly)	• Supply Chain Sustainability Development • Water Resource Management • Waste Management • Occupational Health and Safety Management	• Effluents and Waste • Employment • Occupational Health and Safety
Local Community	As a good neighbor of the local community, we are committed to protecting the environment ideal for dwellings.	1. Charity donations (occasionally) 2. Event sponsorship (occasionally) 3. Telephone contact (occasionally) 4. The CSR website and report (annually)	• Environmental Pollution Management • Toxic Substance Management • Environmental Compliance	• Emission • Effluents and Waste • 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.	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 CSR website and report (annually)	• Law and Regulation Compliance • Energy • Award Engagement	• Emission • Environmental Compliance • Occupational Health and Safety • Customer Privacy

Material Topics Determination and Boundaries

Process for Determining Material Topics

Step 1	Compile the international guidelines, benchmarks and related industrial information, as well as OUCC's CSR related performance in 2020 before the CSR 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 CSR interview meetings and issue questionnaires to the interested parties(incl. 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 CSR matrix for 2020, with 10 material topics.	Magnitude, Sustainability

Material Topics Matrix



- **Economy:** Economic Performance, Market Persence
- **Environment:** Energy, Water and Effluents, Emission, Effluents and Waste, Environmental Compliance
- **Society:** Employment, Occupational Health & Safety, Customer Privacy

Material Topics Boundaries

● Direct impact
▲ Indirect impact
■ Impact due to business relationship

Material topics	Meaning and Importance to OUCC	Upstream: Raw material supplier (CPC)	OUCC	Downstream: Transport contractor	Downstream: Local communicaties	Downstream: Corporate client	SDGs	Management approach (Page Number)
Economy								
Economic Performance	Stable economic development is the foundation of business operations as well as sustainable development	■	●	■		▲		38-42
Market Presence	Provide comprehensive salary and care systems to employees, and strive toward a sustainable future with them		●					73-76
Environment								
Energy	Appropriate energy management can reduce operating costs and risks	■	●			▲	▲	88-92
Water and Effluents	Effective Water resource management through recycling system could enhance the sustainability of the plant resources		●					98-101
Emission	The promotion and control of climate change strategy help develop sustainability		●	▲		▲	▲	89-91
Effluents and Waste	Strengthen the control and management of effluent and waste, and reduce the impact on the environment.		●			▲	■	101,104
Environmental Compliance	Strict compliance to environmental protection regulations is OUCC's promise to the environment	■	●	■		▲	■	105
Society								
Employment	Employees are the most important assets of OUCC. Attending to the need and voices of employees' can increase employee trust and strengthen centripetal force		●			▲		62-76
Occupational Health and Safety	Construct a safe workplace environment, protect employees, and avoid potential costs and risks		●	●		■		113-132
Customer Privacy	Protecting customer information confidentiality is the basic reaction for OUCC to respond to the customers' trust		●			■		76

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 interested parties 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, has been appointed 9th Chairperson of TRCA

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

The President of OUCC, Justin Tsai, has been serving in the chemical industry in Taiwan for a long time, and has made 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.

Please refer to: https://www.oucc.com.tw/csr-97-page428

SINCERE AND DILIGENT PARTNER

OUCC values the communication and interaction of its employees, customers, consumers, supply chain partners, and stakeholders. The company has established sound partnerships and maintain good relations with all its stakeholders through participation, cooperation, and interaction, creating a positive sustainable cycle with an active, professional, and innovative approach.

OUCC is committed to the optimization of process technology, the establishment of sound environmental health and safety, the provision of compensation and benefits better than the industry average, and the continuous strengthening of social participation. These are OUCC's commitments to the sustainable development partners.

2020 Sustainable Performance

Solid Partnerships

- Employee benefits expenditures totaled NT$**62.7** million
- Employee average compensation was NT$**0.919** 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 **685**
- **100**% of freight forwarders passed the evaluation audit

Partner of OUCC

OUCC's staff management system is based firmly on the labor laws. In addition to protecting the basic rights and interests of workers, it is also committed to building a healthy, safe and sanitary working environment in line with the characteristics of the chemical industry.

Through a fair, open, just, and efficient recruiting system, we recruit suitable talents, while keeping in mind of the basic human rights of equal employment opportunities. Through the selecting, training, and keeping of the employees, the goal to find suitable talent to fit a suitable position is reached in order to ensure the quality and work stability of the new employee. To enhance corporate identity, OUCC gathers those with same ideals, and offer outstanding salary, diversified welfare systems, and uninterrupted communication channels to create a friendly and safe work environment and to keep and attract 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

In 2020, the total number of OUCC employees is 341. Due to industrial attributes, there are 303 male employees (89%) and 38 female employees (11%). All employees in the factory are full-time (unscheduled contract) employees.

The head office of OUCC is established in Taipei City, and the factory is located in Linyuan Industrial Zone, Kaohsiung City. To promote and increase local employment opportunities, most of the employees employed in Linyuan plant are given priority to local residents. To promote and increase employment opportunities for the region, there are 94 employees, approx. 31.65% of the total 297 employees at the Linyuan Plant are local residents. We take direct action to support and encourage local employment.

Percentage of Local Residents at Linyuan Plant

Job title	Local Residents	
	Linyuan	%
Engineer/Administrator and above	11	3.70%
Operation-Foreman	14	4.71%
Operation-Operator	69	23.23%
total	**94**	**31.65%**

Note: 1. In terms of international scale, OUCC hires 98.8% of domestic employees. Therefore, the ratio of local employees at Linyuan is used as the basis for calculation.
2. Ration = Number of employee located in Linyuan area/ Total of employee at Linyuan plant.

In addition to local staff, OUCC employs three Indonesians 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 travel arrangements to Taiwan, relevant law compliance, and living assistance and accommodations when they first arrive. OUCC cares for their foreign employees at all times and reaches out in time of need.

OUCC Employee

Since OUCC is a major petrochemical manufacturer, on-site production work has physical requirement, and because of the continuous operation of the plant, the proportion of male employees (including indirect and direct employees) is higher than that of female employees. 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	2020			
		Person		%	
		♂	♀	♂	♀
General Staff	<29	15	6	4.40%	1.76%
	30~50	205	21	60.12%	6.16%
	>50	39	6	11.44%	1.76%
Middle Management	<29	0	0	0.00%	0.00%
	30~50	19	1	5.57%	0.29%
	>50	18	1	5.28%	0.29%
Senior Management	<29	0	0	0.00%	0.00%
	30~50	0	0	0.00%	0.00%
	>50	7	3	2.05%	0.88%
DL	<29	6	0	1.76%	0.00%
	30~50	65	0	19.06%	0.00%
	>50	7	0	2.05%	0.00%
IDL	<29	9	6	2.64%	1.76%
	30~50	159	22	46.63%	6.45%
	>50	57	10	16.72%	2.93%

Note: 1. "Direct personnel" refers to plant shift employees. "Indirect personnel" refers to plant non-shift employees. 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

	2018				2019				2020			
	Person		%		Person		%		Person		%	
	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
<29	6	3	1.61%	0.80%	4	2	1.09%	0.55%	10	1	2.93%	0.29%
30~50	9	4	2.41%	1.07%	9	0	2.46%	0.00%	10	1	2.93%	0.29%
>50	1	0	0.27%	0.00%	2	0	0.55%	0.00%	1	0	0.29%	0.00%

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

Employee Turnovere

	2018				2019				2020			
	Person		%		Person		%		Person		%	
	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
<29	1	3	0.27%	0.80%	0	0	0.00%	0.00%	5	0	1.47%	0.00%
30~50	6	0	1.61%	0.00%	13	1	3.55%	0.00%	21	2	6.16%	0.59%
>50	9	0	2.41%	0.00%	9	2	2.46%	0.01%	21	2	6.16%	0.59%

Note: 1. %=Number of employees resigning (includes retirement but not the involuntary leave)/ total number of employees of the year.
2. On account of the pandemic in 2020, the overall external environment was unstable globally, so was OUCC partly impacted. When compared with the previous two years, more employees who fit the retirement conditions applied for retirement. As OUCC offers better retirement conditions than that of the Labor Standards Act, some employees were prompted their own career planning pursuits, whose choices were fully respected. In the meanwhile, OUCC continues the transformation to integrate technological advantages, develop downstream high-value derivatives, and pursue the profit and growth through sound operations, creating new value for shareholders, customers, and employees.

Multiple communication channels

The OUCC has comprehensive management rules and regulations designed to ensure fair and reasonable treatment of all personnel. Employees can express and communicate their opinions and suggestions at labor-management meetings which are held regularly. Employees and employer are able to present their views in the spirit of coexistence, and by friendly interaction to maintain harmonious relations for the common good.

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 special internal meetings, employee seminar and timely manner, to establish effectively the harmonious relationships, as well as a good working environment.

2020 Employee seminar in Linyuan

	Times	Person	%
Department seminar	Due to the pandemic, individual counselling/guidance had been adopted, and comments were collected for review.		
President seminar	Due to the second wave of the pandemic, it had been postponed till 2021.		
New-employee seminar	1	15	75%

Labor union	● The OUCC Union was established in 1988 to protect the interests of members. Group agreement has been approved in 1995. Union members constitute 70.5% of the employees in 2020. ● Protect the employees' rights to the freedom of association and collective bargaining power without any involvement in the establishment, operation, or management of an organization or collective bargaining. ● Through the union's communication, it promotes harmonious labor relations and creates a good working environment.
Labor/ management meeting	● The regular labor-management meeting appropriately reflects the employees' opinions on the operation and financial status of OUCC or the important decisions concerning the interests of employees, so as to effectively solve the problem. ● Should the company find it necessary to make any major changes that affect OUCC employees, the notification period shall comoply with the relevant regulations of the Labor Standards Act.
Internal meeting	● 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 2020.
Employee seminar	● We advocate internal rules and regulations, collect and reorganize employee opinions, and then forward them to each responsible unit for improvement.
Occupational safety & health committee	● OUCC labor representatives account for 50% 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. ● Taipei Office: (02)2719-3333 ● Linyuan Plant: (07)641-3101

2020 Important Labor Resolutions

In 2020, OUCC reached consensus with the employees on matters relating to CSR resolutions through labor meeting discussions:

1. Revise the pension policy to reinforce the care given to employees of the new Labor Pension Act.
2. Reinforce the inspection of personnel operation qualifications and arrange license holders to supervise the working personnel in order to avoid the possibility of machines operated by non-license holders.
3. Clarify the year to which awards and punishments are distributed, so to have the annual evaluation focused on the performance during the evaluation period.
4. Establish the principle for the conversion of paid leave from previous year into average salary, which will significantly increase the employee's pension.
5. Agree to the addition of regulations such as sobriety test upon entering the plant and performance management in the Work Rules to improve management.

Human Rights Protection

To protect the rights and interests of employees, 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.

To reduce human rights risks and improve the employees' understanding of human rights, OUCC has set up human rights training course for all new employees upon employment to enhance the concept of diversity, equality and tolerance for all employees, and to create a friendly working environment. In 2020, OUCC's HR staff were the seed participants for human rights training, and we held promotions and discussions relating to human rights during the monthly HR meetings. The topics included gender friendly care and labor rights. There were a total of eight persons, with 96 hours of total training hours.

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.

Workplace diversity

	2018	2019	2020
Aboriginal employee	1	1	1
Disabled employee	3	2	1

Note: OUCC values the employment rights of the indigenous and disabaled persons, and abide by labor regulations. In the situation where insufficient number of people with disabilities were hired in 2020, the differential subsidy have been paid according to the law. Recruitment is still underway for the suitable candidates.

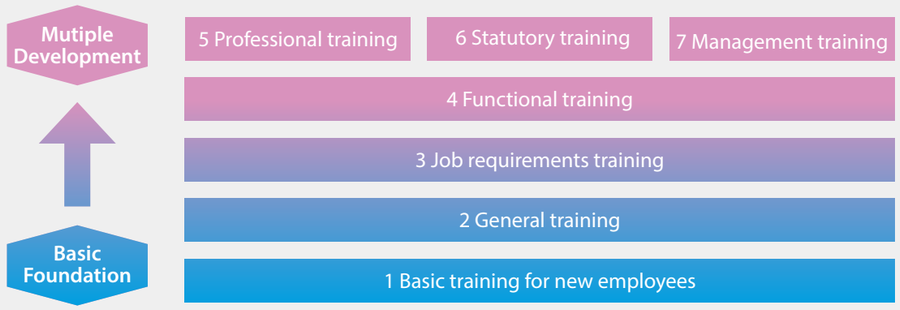
Human Protection Mechanism

Fair employment	• Provide open, fair, and impartial job opportunities to all applicants in accordance with the "Employment Service Act". • The "Human Resource Evaluation Committee" has been established to administer the "Rules Governing Human Resource Evaluation" and matters that involve commendation or disciplinary action.
Labors' freedom and rights	• Domestic and foreign employees are respected for their freedom of choices and occupational rights, and are not forced or pressured to conduct labor activities, nor will their freedom of movement be unreasonably limited in the working environment. • Employment agreements with foreign employees are written in their native language, in which the terms and conditions of employment are in accordance with local laws and regulations or better provided, and no arbitrary changes are made to the content of an employment contract. • All employees are treated with equal care and protection irrespective of their nationality.
Gender-friendliness	• The "Act of Gender Equality in Employment and Sexual Harassment Prevention, Grievance, and Discipline" and "Mechanism for Handling Complaints of Sexual Harassment" 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 and sexual harassment.
Personal data security	• The "Rules Governing Personal Data" have been clearly set down for the preservation of confidentiality and the management of personal data, as well as to ensure the safety and legality of OUCC for the collection, processing, usage, and international transmission of personal data.
Multiple grievance channel	• Abide strictly by the "Rules Governing Employee Grievance" and establish a smooth grievance channel. • Stakeholders may file for appeal through the "Anti-corruption mailbox" on OUCC's official website. • There were no complaints in terms of human rights in 2020.

Talent Training

At OUCC, we understand that the talents hold the vital key to the sustainable management of the company, which are also the source of competitiveness. To help employees maximize their potential, we have established a complete education and training system which maps out plans for short-, medium-, and long-term professional career development. In addition to increasing internal cohesion, the professional potential of employees is inspired and enhanced, and grow simultaneously with the company.

OUCC Education and Training System



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

Employee Training Hours

Unit: hours

Type of Employee	Gender	2018		2019		2020	
		Hour	Average	Hour	Average	Hour	Average
General Staff – Direct Labor		1,978	23.83	4,549	26.60	1,979.50	25.38
		0	0	21.5	21.50	-	-
General Staff – Indirect Labor		4,397.5	21.66	3,443	31.02	6,549.50	36.19
		705	20.14	867.5	26.29	937.00	28.39
Middle Management		552.5	14.93	967	26.14	1,013.50	27.39
		4	1.33	29	9.67	36.50	18.25
Senior Management		170	18.89	306	43.71	65.00	9.29
		28	9.33	1	0.33	22.50	7.50
All Employee		7,098	21.38	9,265.3	28.42	9,607.50	31.71
		737	17.98	919	22.98	996.00	26.21

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 Investment Statement

Type	Item	Unit	2018	2019	2020
Total employee training hours	Total	hr	7,835	10,184	10,603.5
	Average	hr	21.01	27.83	31.1
Total employee training amount	Total	NT$ million	0.98	1.24	0.91
	Average	NT$	2,630	3,390	2,654
	The proportion in the current year's total revenue	%	0.0067%	0.0105%	0.0092%
	Total Revenue	NT$ thousand	14,619,729	11,762,636	9,798,912
	Total number of employees	Person	373	366	341

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 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 2020. However, this did not affect our employee training programs. By utilizing the vacancies resulting from a decrease in production, an "Intensive Course on Professional Capabilities Development for Manufacturing Industry Quality Control Personnel" was introduced in cooperation with the Productivity Center combining with programs of the Industrial Development Bureau, MOEA. Practical application results were generated for the seed participants dispatched by each department, professional capabilities such as SPC statistical processing, the MSA measurement system, DOE (design of experiments), and 7Ss in management were achieved.

It is hoped that this training will enhance our quality control methodology/optimization and increase the number of useful tools that can be effectively utilized to increase work efficiency.

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 experience. 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 OJT allows new employees with little experience to learn from doing, and do 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.

In 2020, 10 young people aged under 29 were hired. 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. As a response to this trend and to allow big data to take root, the high-level managers of OUCC have been arranged to attend AI programs at the Taiwan AI Academy since 2019, hoping that they would take the lead to make OUCC as a whole become more competitive.

Nine managers attended the Taiwan AI Academy programs between 2019 and 2020. The training courses were three months long, and a fee of NT$48,000 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.

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, and are expected 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 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 course to increase the employees' level of professional knowledge, and to prepare them for 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 will help them understand how AI and big data work, and lay a stable 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 2020 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, but have had an evaluation period of less than one year	Base on the date reporting to work
	New recruits are evaluated for qualification after a 6-month probation period	
All Employees (Note)	An annual comprehensive evaluation resulted from each employee's absent status, leadership, work capability and performance, etc	Annually

Note: All employees do not include new recruits

Sound Pension Mechanism

OUCC has been established for more than 45 years and provides many employment opportunities in the Kaohsiung Linyuan region. We have trained large numbers of professionals and many are now reaching the age for retirement. We 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.

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. We help them to keep in touch with others, and share health management and environmental protection concepts via multiple channels. These former colleagues are able to exchange thoughts on the management of their own health and lives. This connects retired personnel and the company closer together and provides a channel for the planning of retired life. This makes the lives of our retired personnel more interesting, free, and less worrisome.

List of OUCC's Pension Plan

OUCC's total value of payable pensions	NT$322,582 thousand
Percentage of retirement fund set aside by the company	10%
Percentage estimation basis	Actuary report
Time of evaluation (annual)	2020
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

Note: Please refer to 2020 Annual Report page 49.

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 2020, NT$33.622 million was deposited into the special account for retirement. By end of 2020, the sum of labor retirement reserve account reached a total of NT$62.902 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.

Employee Compensation and Benefits

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, 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.

OUCC leads the industry in the provision of double group insurance. The coverage includes life insurance, accident insurance, hospitalization and medicine, and cancer. Employees do not need to pay to be able to enjoy complete and comprehensive benefit. The employee benefits expenses totaled NT$62,699,872 in 2020 with welfare subsidy of NT$18,317,131.

Although the 2020 year-end banquet had to be cancelled due to the pandemic, the company still held the senior employee award ceremony. In addition to the different awards of gold gifts according to the years of service from 10 to 40 years, what is more special is the invitation before the event, the detailed planning of the event, the personalized award page and the commemorative photo of the award, all of which make the members feel honored.

Taiwan basic salary	OUCC basic salary	
	♂	♀
23,800	30,000	30,000
Basic salary ratio with Taiwan	1:1.26	1:1.26

Full-time Employee Benefits for Non-supervisory Positions

Item	Unit	2019	2020	Compared to the previous year
Number of full-time employees	Person	354	328	93%
Average salary	NT$	0.958 million	0.919 million	95.9%
Median salary	NT$	0.893 million	0.860 million	96.3%

The OUCC Employee Benefits Expenses

Unit:NT$

Type	2018	2019	2020
Pensions	24,994,677	23,309,854	21,700,882
Insurance expenses	32,713,618	33,873,999	30,659,324
Employee (profit) recompense	31,973,230	457,197	0
Special bonuses	37,705,780	6,633,163	0
Shuttle bus	9,681,549	9,606,843	9,169,059
Employee health checkup	1,134,899	1,604,675	1,170,607
Total	**138,203,753**	**75,485,731**	**62,699,872**

Note: Employee benefits include regular appropriation (for example: 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 does not include education and training, protective equipment, and staff costs or expenses directly related to the job.

The 2020 Welfare Measures List

Unit:NT$

Welfare measure	Description	Subsidy amount	Number of beneficiaries
Marriage subsidy	Staff marriage subsidy, NT$2,000/person	4,000	2
Childbirth subsidy	Employees childbirth subsidy, NT$1,000/per birth	8,000	8
Hospitalization subsidy	Staff hospitalization subsidy, NT$1,000/time	8,000	8
Staff travel subsidy	Full subsidy for each employee Lineal family members, NT$1,600/person (maximum 3 people)	878,030	221
Self-reliant tour	Self-reliant tourism and academic events	7,907,900	352
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	173,000	200
Birthday celebration subsidy	Staff birthday celebration, NT$2,000/person	686,000	343
Year-end banquet	Employee year-end dinner	304,200	230
Retirement Benefits Application	Employee retirement gifts	333,738	18
Funeral subsidy	Staff NT$50,000 First degree of kinship NT$5,700/per person	39,900	7
Group insurance	Life insurance, personal accident insurance and medical insurance, hospitalization insurance	806,109	352
Festival Bonus	A festival bonus of NT$5,000 for each of four holidays (New Year, Dragon Boat, and Moon Festivals, Labor Day)	7,168,254	352
Total		18,317,131	2,093

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 NT$1,610,400 was subsidized in 2020.

Transportation Subsidy Amount

Unit:NT$

Year	Subsidy amount
2018	1,838,100
2019	1,783,100
2020	1,610,400

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. There are total 18 clubs, and currently 17 clubs receive annual grants from the company, NT$173,000 was granted in 2020.

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. We give full consideration to any difficulties and problems encountered by our customers with their applications. In addition to the provision of high-quality products and technical services, we have established close relationships by the promotion of "customer needs-oriented" in terms of product development and technological innovation.

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 2020.

Customer Satisfaction Management

We value customer satisfaction. In addition to relevant communication channels, we also hold quality management reviews on a semi-annual basis as a response to requests and comments made by customers regarding products and services.

1. Occasional customer visits
2. An annual customer satisfaction survey
3. Occasional distributor meeting (sales)

In 2020, OUCC carried out a customer satisfaction survey on EG and EO products. The customer coverage rate was 100% and the average score on satisfaction was 33.3 out of 35. A satisfaction survey for gas customers was also conducted (recovery ratio 95%) 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)

Year	2018	2019	2020
Average score (out of 35 points)	33.1	33.3	33.3

Introduction to Customer Feedback/Comments Handling Form

OUCC enhanced customer service efficacy through IT in 2020, specifically improving the "customer complaint handling procedure" of business units, and recording details of the "customer complaint handling process". Currently, we have completed the development of the 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	A decision about reporting a case to the President is made 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 depart-ment
Response time to customers	Fast	Slow

Remote Storage Tank Monitoring System

OUCC independently developed the "remote customer storage tank monitoring system" through improving the transportation scheduling efficiency, decreasing the number of empty vehicles, saving delivery time, and avoiding the cut off of materials, making customer services even more stable. Since the number of trips can be more evaluated and counted, through combining vehicles, not only can we effectively save transportation costs, but also significantly reduce the greenhouse gas emissions generated by transportation.

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	

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 2020.

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 effectiveness of ISO 9001 quality management system.

Department in Charge	Process	Operation Reference	Forms
Production Department	Finished goods sampling in the manufacturing process		Plant Periodic Sampling and Analysis Prospectus
Quality Control Department - Instrument Team	Inspection → NO / YES	Work Instruction inspection	Finished goods specifications • Quality Nonconformity Form • Quality Alert Form
Production Department	Finished goods sampling in the intermediate tank	Operating Procedure for Nonconforming products	Finished goods specifications
Quality Control Department	Inspection → NO / YES	Work Instruction inspection	Finished goods specifications
Production Department	Finished goods sampling in the big tank		
Quality Control Department – Gas Team	Inspection → NO; Finished goods sampling in the barrel or tanker → Inspection → YES / NO	Work Instruction inspection	Finished goods specifications
Logistics Team Gas Team	Finished goods sampling in the barrel or tanker	Operating Procedure for Bulk Product Shipment	

1. The product in nonconforming tank
2. Mixed tank
3. Emitted into the atmosphere

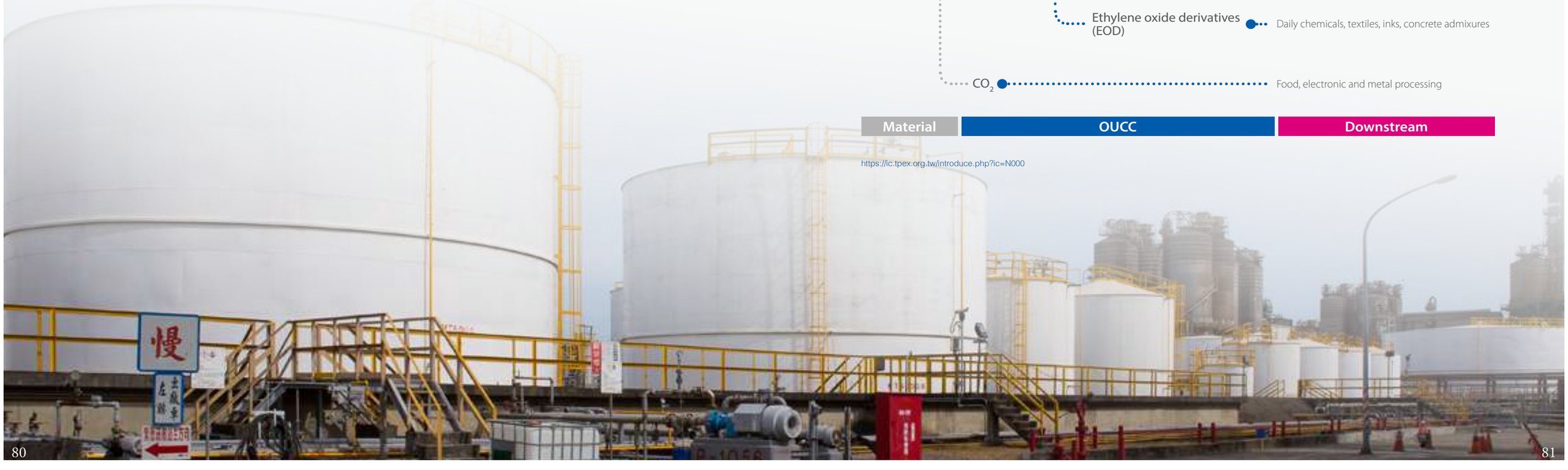
Note: "Emitted into the atmosphere" refers to Company gas plant products - nitrogen, oxygen, and argon. These are non-toxic and are emitted directly into the atmosphere in the event of failure of the finished product inspection. Also, gas is not pumped into the storage tank until it passes analysis.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

Chemical Supply Chain

In addition to continuously optimizing the supplier management process, 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.

2020 Management Results

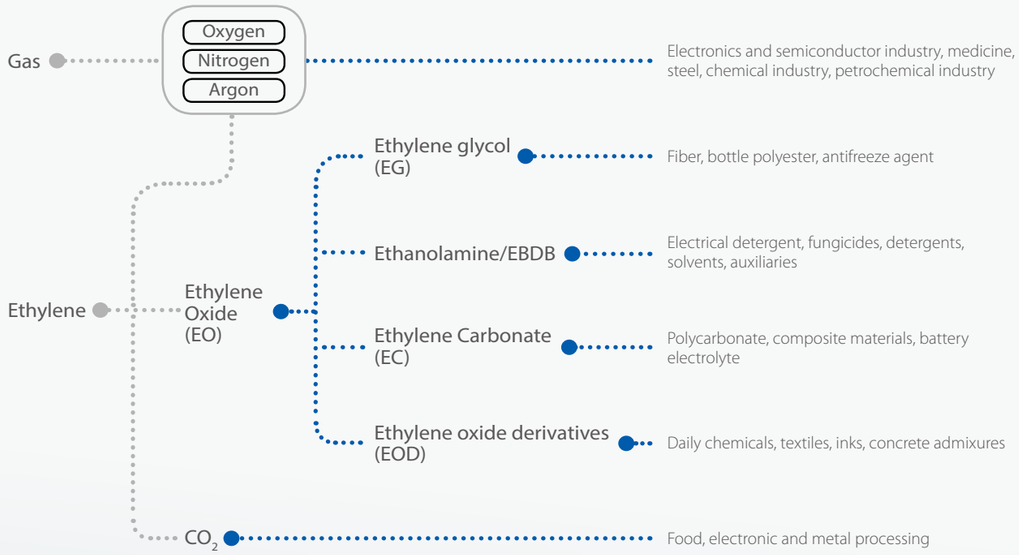
- 100% of suppliers followed OUCC environmental policy
- The total number of evaluation audits on suppliers was 685
- 100% of freight forwarders passed the evaluation audit
- 100% of freight forwarders must sign the "Supplier CSR Commitment Form"
- Future evaluation planning of transportation contractors is to be divided according to ESG risk ratings, and lists of the high, medium, low risk contractors are being made
- Existing suppliers must complete an on-site or written evaluation



Supply Chain

The upstream of Taiwan's petrochemical industry chain is crude oil, naphtha refined from crude oil, gasoline, diesel, kerosene, fuel oil, lubricant oil, and related mechanical equipment. 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 by chemical reactions such as polymerization, esterification, and alkylation. The downstream flow is comprised of daily consumer products, such as plastic and rubber items, cleaning agents, artificial fibers, dyes, adhesives, plasticizers, pesticides and cosmetics. These are made from processed plastics, rubbers, and artificial fibers and the like, and used in a wide range of applications.

OUCC Industry Supply Chain



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". The declaration of compliance with environmental policies and an environmental impact assessment must be signed and sealed, and returned to the Company by all suppliers.

During the implementation phase of the contract, we will adhere to the relevant regulations, 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 corporate social responsibility of the suppliers and contractors, we have worked closely with on labor, health and safety, environment, management, and business ethics to establish a comprehensive supply chain mechanism, as well as lead supplier partners to commit to sustainability.

In addition, we proactively communicate with our suppliers, encourage them to enhance their management in breadth and depth, and combine the internal strength from the management of the Company and the external supply chain partners to ceaselessly strive for the CSR. 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 to become a positive force of the society.

2. Sustainable Management Mechanism

To ensure that suppliers can understand and to give OUCC a better grasp of supplier sustainable development, we have designed a CSR self-assessment questionnaire. All our new suppliers are also required to sign a letter of commitment. This helps our suppliers understand the content and requirements of the relevant policies and also ensures that they join us in a commitment to CSR and its implementation.

Sustainable Management Mechanism	2020 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". This has three main aspects including employee and human rights, environmental protection, and ethical management. In 2020, a total of 80 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: 2020 Supplier Implementation Ratio = number of suppliers who signed the commitment in 2020/total number of suppliers in 2020.

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, the items evaluated 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 2020, 685 trading suppliers underwent written evaluations and 1 were disqualified, the qualification rate was 99.9%

Transportation Contractor's CSR Audit

The flammable, explosive and sometimes very toxic nature of chemicals carried by tankers make their transportation a high risk operation that can be hazardous. Negligence can lead to serious disaster. An accident can cause loss of life or serious injury, 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, 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 2020. The total number of evaluation audit on transport is 6 in 2020 with the passing rate of 100%.

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

2020 Management Results

All the contracted tankers of OUCC have passed the inspection performed by the National Certification Institution. 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%	97.6%
ISO 14001	4	66.6%	76.0%
ISO 45001/OHSAS 18001	6	100%	97.6%

Note: Freight Delivery Ratio = transaction amount of contracted tanker with introduction of international management system in 2020/total transaction amount of all contracted tankers in 2020.

Future Goal

In response to CSR 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 certification, or must be free of any industrial safety accident within the previous five years. All suppliers are invited to participate in CSR 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 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. First, the OUCC internal units will conduct announcement, such as factory regulations, environmental safety operations main points, etc., and conduct co-experience sharing of the OUCC supervision and contractor management. Lastly, we provide temporary motions to submit the discovered problems and review followed by improvements to ensure the safety of the workplace. In the 2020 Safety Conference, the matters promoted and announced by the Environmental Safety unit were:

1. COVID-19 restriction measures
2. Fire operation to take measures to prevent sparks from flying out
3. Propagation of news about accidents and other incidents in neighboring factories in the Industrial Park
4. Safety guidelines for climbing operations on pile drivers
5. Contractor Safety bi-weekly meeting, supervisor and report in rotation schedule

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 2020, local procurement amounted to NT$1,153.209 million, accounting for 85%(Note 3), 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. 2020 Percentage of procurement amount from domestic suppliers = procurement amount from domestic suppliers in 2020/total procurement amount in 2020 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 2020 procurement list shows the cost of the motors and equipment that complied with IE3 specifications reached NT$67.506 million; green procurement in the equipment category was 9.31%. (Total procurement expenditure in the equipment category in 2020 was NT$724.888 million.)

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 change to face global issues, such as global climate change, the water and energy shortage 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.

2020 Sustainable Performance

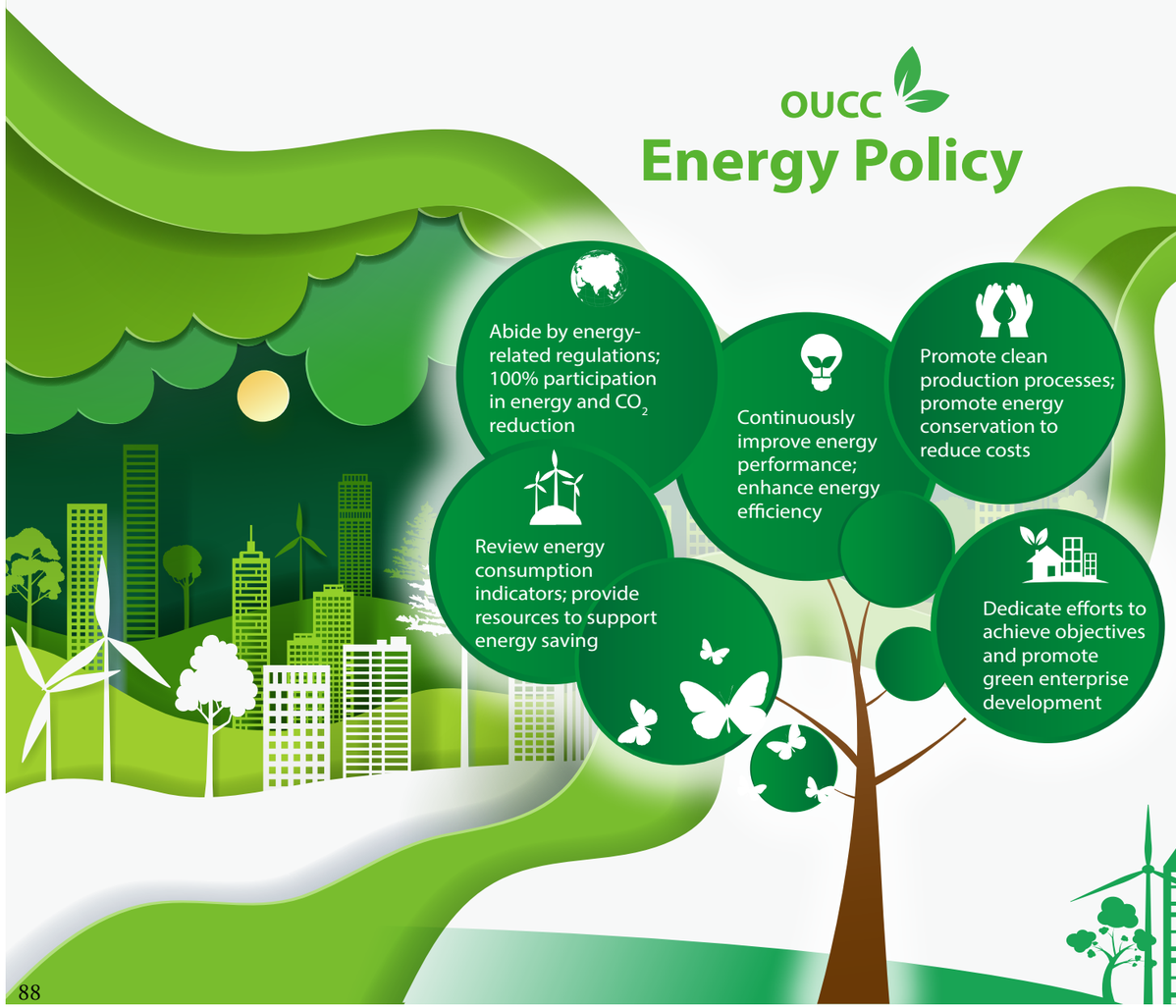
- Reduced carbon dioxide by **35,934** t-CO_2e per year
- Obtained **ISO 50001:2018 Energy Management System** transfer certification.
- Promote **GHG Scope 3** inventories
- **The first** company in Taiwan to introduce **ABR technology**
- NT$**68** million was invested to set up a wastewater recycling system.
  The system trial and performance tests were completed in December 2020.
  The actual current water consumption is around **700** tons perday,
  with a wastewater recycling rate of more than **60**%
- Establish 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$**3.25** million

Energy Management Strategy

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

OUCC Energy Policy



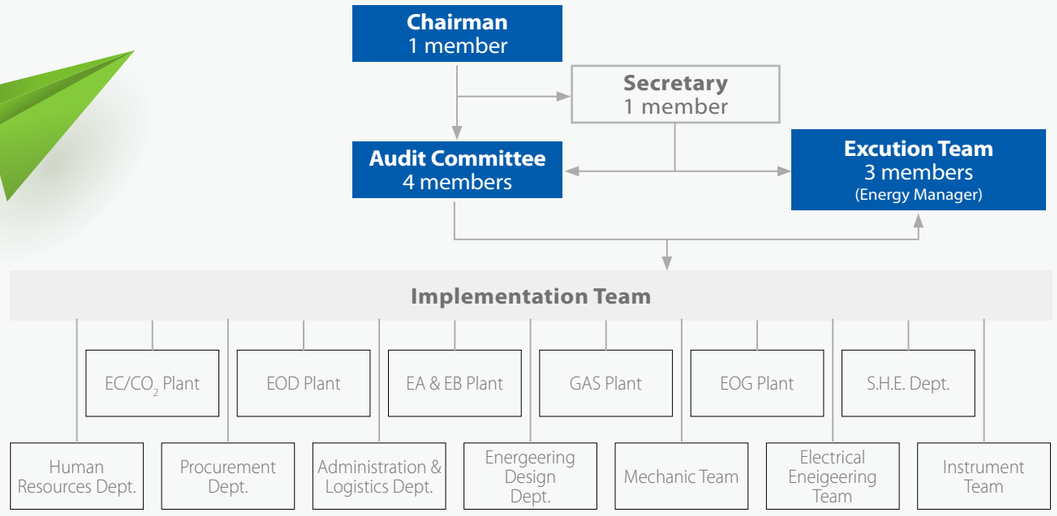
Dedicated Energy Conservation Organization

OUCC established an inter-departmental "Energy Saving and Carbon Reduction Committee" and set up "Procedures for the Organization of Energy Saving and Carbon Reduction Committee." Various energy-saving measures were implemented, and on-site inspections were conducted in cooperation with the competent authorities.

The Energy Saving and Carbon Reduction Committee holds quarterly meetings, including reviews of energy saving and carbon reduction plans, annual objectives setting up for energy saving, track the effectiveness and evaluate the progress of energy saving and carbon reduction implementation, and report progress in energy conservation to the chairman's office for integration and analysis.

Through the formation of cross-department network, the Energy Saving and Carbon Reduction Committee collects effectively the energy-saving and innovative technological data, and implements solidly the various energy-saving programs, to achieve the goal of GHG reduction and global warming mitigation.

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.

1. Carbon Management Targets

Schedule	Target
Short-term (2021)	● Take 2015 as the base year, 1% reduction as the average annual target ● 2021 reduction target: 1%, of reduced volume 3,210 t-CO_2e/year ● Actual reduction was about 11.2% in 2020; carbon reduction approx. 35,934 t-CO_2e/year; the target achievement rate 100% ● 2016-2020: 5 years cumulative reduction of 5% (approx. 16,000 t-CO_2e) ● Actual reduction rate 26.8% between 2016 and 2020; the cumulative carbon reduction amount approx. 86,159 t-CO_2e; the target achievement rate 100%
Mid-term (2022-2026)	● Annual reduction target: 2% per year, of reduced volume 6,420 t-CO_2e/year ● 5-year goal: 5 years cumulative reduction of 10%, of reduced volume 32,100 t-CO_2e
Long-term (2027-2031)	● Emissions of 2030 reduced by 20% compared to 2015 ● The target can be reached by complying with the Greenhouse Gas Reduction and Management Act, and the carbon reduction and zero emissions schedule set out by the government industry response team

Note: 2015 greenhouse gas emission: 320,995 t-CO_2e.

2. Greenhouse Gas Emission

	Unit	2020		
		Taipei	Linyuan	**Total**
Scope 1	t-CO_2e	2.32	39,787.9	**39,790.22**
Scope 2	t-CO_2e	56.51	296,234	**296,290.51**
Total emission	t-CO_2e		336,080.73	
Number of employees	persons		341	
Operating income	NT$ thousand		9,798,912	
Emission intensity	t-CO_2e/person		985.574	
	t-CO_2e/NT$ thousan		0.034	
Emission collection method		Operational control		

Note: 1. The 2020 Linyuan Plant data is certified by SGS-Taiwan and obtained ISO 14064-1:2006 certification.
2. GWP is refer to IPCC (2007) global warming potential value.
3. The discharge coefficient is used as 0.509kg-CO_2e in 2019.

Greenhouse Gas Emission (Taipei Head Office)

	Item	Unit	2018	2019	2020
Scope 1	Official car fuel consumption	L	1,091	1,028	1,023
	Official car CO_2 emissions	t-CO_2e	2.58	2.33	2.32
Scope 2	Power consumption	kWh	91,324	114,829	111,012
	CO_2 emission from power consumption	t-CO_2e	50.59	61.20	56.51
Total		**t-CO_2e**	**53.17**	**63.53**	**58.83**

Note: 1. The above data of GHG inventory is conducted by OUCC.
2. Oil consumption 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/

Greenhouse Gas Emission (Linyuan Plant)

Unit: t-CO_2e

Item	2018	2019	2020
CO_2	54,364.0685	53,623.08	36,926.6432
CH_4	29.0175	37.72	35.6400
N_2O	9.3274	4.17	3.9634
HFCs	2,706.7098	2,820.87	2,821.6516
Direct greenhouse gas emissions (Scope 1)	57,109.1232	56,485.84	39,787.8982

3. Energy Consumption

Item	Unit	2018	2019	2020
Gasoline	Kilo-Liter	1.775	11.078	9.078
	Gallon	467.05	2,926.55	2398.05
	GJ	58.38	361.54	296.25
Fuel	Kilo-Liter	715.122	0	0
	Gallon	188,190	0	0
	GJ	270,993.6	0	0
Diesel fuel	Kilo-Liter	647.350	529.28	538.64
	Gallon	170,355.26	139,822	142,295
	GJ	23,509	18,602	18,931
Power	kWh	447,722,345	460,598,400	459,206,400
	GJ	1,611,800	1,657,344	1,652,335
Steam	ton	223,588	182,743	307,376
	GJ	584,011.86	549,336.97	923,991.63
Natural Gas	M^3	-	-	253,021.5
	GJ	-	-	9,527.78
Total energy consumption	GJ	2,490,372.84	2,225,644.06	2,605,081.44
Energy intensity	GJ/person	6,677	6,081	7,640
	GJ/NT$ thousand	0.17	0.19	0.27
Number of employees	persons	373	366	341
Operating income	NT$ thousand	14,619,729	11,762,636	9,798,912

Note: OUCC uses non-renewable energy.

4. 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. Under effective management, the actual annual power saved was about 4.76 million kWh in 2020, with a power-saving rate of 1.03%.

Schedule	Target	Strategy
Short-term (2021)	● The annual power saving rate is 1%	Power saving measures planned for 2021: 1. KI circulation pump renewal project in EOG plant 2. EOG factory newly purchased LiBr chilling machine to replace the existing traditional air conditioning system 3. The coal-fired furnace at the EOG plant is converted to the use of natural gas, which is used as well by the Regenerative Thermal Oxidizers. The use of diesel-powered pumps discontinued
Mid-term (2022-2026)	● The annual power saving rate is 1% ● Accumulation of 5% on power savings for 5 years	1. Introduction of electrical energy-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 find 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 solar PV system to reduce the use of outsourced electricity 6. Evaluate and build 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 (2027-2031)	● Accumulation of 10% on power savings	1. Ongoing improvement in energy efficiency and carbon reduction management 2. Evaluation for the installation of heat recovery & power generation equipment

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

5. Action Plan for Energy Saving

The feasibility of a high-efficiency low-carbon heat and electricity cogeneration system at the Linyuan Plant is being evaluated as a response to the official government energy policy. We anticipate that the electricity and steam will fulfill all the requirements for production. Additionally, to comply with the "Regulations for the Management and Setting up 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 power and certificates", and the "set-up of energy storage equipment" are being actively evaluated. It is hoped to achieve the legal obligation of 10% green power 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 usage by the plant with the structured approach, in search of energy-saving opportunities. In addition, carbon reduction measures in a number of 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 reducing greenhouse gas emission.

2020 Energy Efficiency Improvement Results

	Energy saving project	Estimated energy consumption saved annully (10,000 kWh)	Estimated annual car-bon dioxide reduction (t-CO_2e)
EOG Plant	To save both water and electricity, the water distribution in cooling towers #1 and #2 was readjusted and optimized and cooling water pumps were no longer used	301.8	1,536
EA Plant	Pump loading adjustment of the processing area	25.4	130
EOD Plant	The frequency converter was installed on the mixer of reactor R8-501	84.69	431
	Production schedules adjustment	64.39	328
EOG Plant	Renewal of the EO reactor catalyst to increase the reaction efficiency and decrease CO_2 emission	-	33,509

Estimated saved electricity consumption of **4.76** million kWh, and reduced carbon emission of **35,934** t-CO_2e per year

Energy Saving Improvement Results

Type	Item	Unit	2018	2019	2020
Process Improvement	Investing Amount	NT$	41,038,203	12,710,000	521,612,000
	Energy Saving	GJ	58,855	26,828	14,094
Equipment Upgrade	Investing Amount	NT$	32,883,708	830,000	300,000
	Energy Saving	GJ	84,702	870	3,048
Total	**Investing Amount**	**NT$**	**73,921,911**	**13,540,000**	**521,912,000**
	Energy Saving	**GJ**	**143,557**	**27,698**	**17,142**

Note: Estimated energy savings are based on the reporting to the Energy Bureau, starting from the month following the completion of the energy saving measures, and can be calculated across years.

New Green Sustainable Manufacturing Processes

In response to the tightened emission standards implemented in July 2018 by the Kaohsiung City government, and in view of the fact that the current steam boiler uses heavy oil, which is uneconomical to convert, we have promoted a sustainable new process.

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 in stead of diesel, resulting in an estimated electricity saving of 7,836 kWh and diesel consumption decreased by 650 kL per year, as diesel powered pumps are no longer in use. The project completed in Jan. 2021.

Future Plans

- In response to the implementation of the government greenhouse gas reduction and energy policies in 2021, as well as the energy requirements after the completion of the new specialty chemicals plants this year, to readjust the heat/electricity ratio. A high-efficiency low-carbon heat and electricity cogeneration system is being planned in response to the energy structure change in 2025 as an establishment goal.

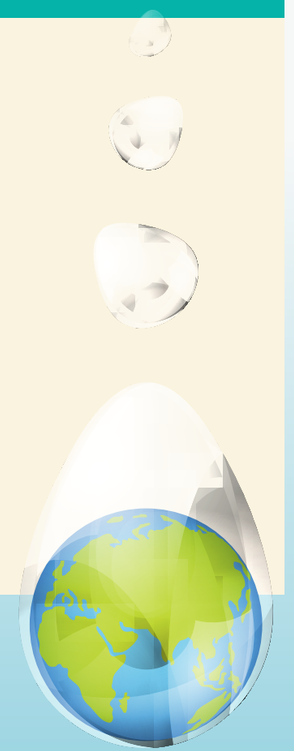
The Paving and Rain and Polluted Water Diversion and the Flood Retention Construction in the Plant Area

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

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

Expected Benefits

- The production processing areas around each plant were paved to beautify 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 respond to 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 the loading at the end.

Upon reconfirming the overall water distribution and heat load of EOG, the water circulating coolers (TT-201N/TT-201) are now provided with cooling water from tower #2, and the interior of which can be isolated for maintenance; while the TT-506/TT-402/TT-410 coolers were provided from cooling tower #1. The optimization of water reallocation for both cooling water towers, coupled with the no longer used cooling water pumps, help to achieve the goal in saving water and power.

Expected Benefits

- Operation of the EOG plant became more flexible and stable.
- Discontinuing the use of #1/#2 cooling water pumps (450hp and 500hp) results in annual savings of approx. 6 million kWh at a cost of NT$13.27 million, and reduces the annual greenhouse gas emissions by 3,218 t-CO_2e.

Waste Heat Recovery

To save energy, a new 370 USRT LiBr multi-effect chilling system is installed to recycle and reuse the excess steam of Linyuan plant. With the excess low-pressure steam from the EOG plant processing area as the heat source and cooling water from tower #1 as the cold source, the chilling water at 15℃ is produced to replace the old spiral type chiller unit for air conditioning in the EOG control room, the laboratory and R&D buildings to save a significant amount of energy and electrical power.

Expected Benefits

- The new 370 USRT LiBr multi-effect chilling system replaces the old screw type chiller unit for air conditioning in the EOG control room, the laboratory and R&D buildings. The estimated annual electricity savings are approx. 2 million kWh, equivalent to a reduction of 1,018 t-CO_2e per year.

Green Energy Strategy

1. **Photovoltaic system:** The installation of a photovoltaic system, with capacity of 100 kWh and up, and an average annual power generation of more than 120,000 kWh on suitable buildings at the Linyuan plant, is planned for self-use and a license has been obtained.
2. **A heat and power cogeneration system:** In response to the implementation of the government greenhouse gas reduction and energy policies in 2021 as well as the energy requirements after completion of the new specialty chemicals plants this year, the heat/power ratio was readjusted. A high-efficiency low-carbon heat and power cogeneration system is being planned in response to the energy structure change in 2025 as an establishment goal.
3. **Mid- to long-term plan:** the following proposals: "Set up of renewable energy facility (rooftop photovoltaic system)", "Purchase green power and certificates", and "Set up of energy storage equipment" are being actively evaluated. It is hoped to complete the construction in five years and to achieve the legal obligation of 10% green energy.

6. The Mitigation of Transportation Emission

In response to the need to save energy and reduce carbon emission, we require 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	2020 Result
Action 1	Promote video conference	● Increase the number of video conferences to reduce the frequency of business travel between Taipei and Kaohsiung. ● In 2020, new multipoint video equipment were added to cloud platform services.	Videoconferences in 2020 (including regular and irregular use of ZOOM) totaled **1,471** meetings
Action 2	Encourage employee commuting	● 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.	Around **116** employees took the company shuttle bus to and from work in 2020 It is estimated that early departure of the shuttle bus saves 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 each day
Action 3	Enhancing the fuel efficiency of outsourced tankers	● No outsourced tankers may remain in use for more than 15 years. ● This has encouraged the use of new energy-saving tankers. The CO_2 emission and energy used in the transportation process has been effectively reduced by such measure.	Continue to enforce the strict rule that transportation vehicles must not be in use for more than **15** years

Resources Recycling

Water Resource Management

Schedule	Target
Short-term (2021)	● Daily water consumption reduced by 2% ● Daily saving 100 metric tons of water
Mid-term (2022-2026)	● Daily water consumption reduced by 20% ● Daily saving 1,000 metric tons of water ● Calculate water footprint
Long-term (2027-2031)	● Daily water consumption reduced by 50% ● Daily saving 2,500 metric tons of water

Water Resource Usage

The source of water for the OUCC Linyuan plant is the Fengshan Reservoir, and no water source is taken from the water resource pressure area, which is treated and used by the water treatment plant. The Plant is located in the industrial park, and waste water is discharged into the industrial sewers, which does not affect the water source. To cope with the risk of water shortage or floods caused by climate change, we have formulated a comprehensive water resource management plan in cooperation with the local government, and have also set water resource management objectives to handle emergencies and water conservation measures.

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 in 2018 to set up a wastewater recycling system at the Linyuan plant. The system trials and performance tests were completed in December 2020. Up to 1,000 tons/day can be reclaimed each day, with a 70% highest wastewater recycling rate. This water can be used in the cooling towers and the current actual production of recycled water is around 700 tons/day with a wastewater recycling rate over 60%. As of the end of December, the total volume of recycled water was about 35 tons.

OUCC has submitted a survey of their willingness to use recycled water to the Industrial Park. The plan is to use 1,500 tons/day, and the target is that 50% of the water used should be reclaimed.

Water Usage

Unit: million L

	2018	2019	2020
Linyuan Plant	2,181.603	2,155.088	2,076.578
Taipei Head Office	0.724	0.782	0.913
Total	**2,182.327**	**2,155.870**	**2,077.491**

Note: The 2018~2020 figure is based on the water bill data.

2020 Water Usage (Linyuan plant)

Unit: megaliters

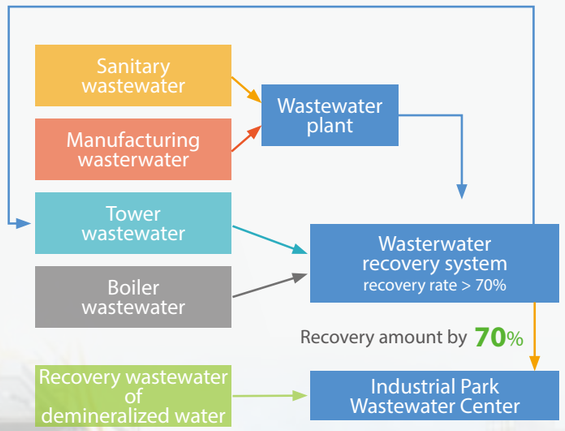
Type	Description	Statistics
Water withdrawal	Freshwater (≤1,000 mg/L Total Dissolved Solids)	2,076.578
	Other water (>1,000 mg/L Total Dissolved Solids)	307.376
	Total water withdrawal	2,383.954
Water discharge	Freshwater (≤1,000 mg/L Total Dissolved Solids)	0
	Other water (>1,000 mg/L Total Dissolved Solids)	515.969
	Total water discharge	515.969
	Emission rate (%) (note 4)	21.64%
	Primary treatment (note 1)	1,225
	Secondary treatment (note 2)	420
	Tertiary treatment (note 3)	-
Water consumption	Total water consumption (note 5)	1,867.985
	Change in water storage (note 6)	0
Water recycled/Water saving	Recycled water volume from production processes	245.9
	Recycled percentage from production process (%)	10.31%
	Total recycled water volume	280.945 (note 11)
	Total recycled percentage (%) (note 7)	11.78% (note 11)
	Number of uses of a single drop of water (note 9)	1.14

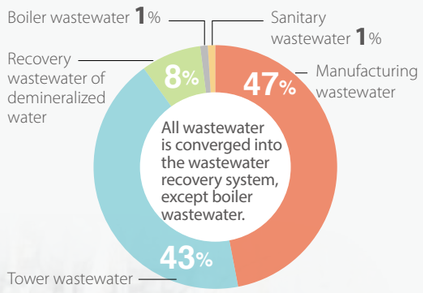
Note:
1. Primary treatment removes solid waste, oil, sand, hard particles and other precipitable substances from the sewage through filtration, sedimentation, and feathering.
2. Secondary treatment involves the decomposition of organic compounds in the sewage to inorganic substances by passage through a trickling filter, aeration, and disinfection.
3. Tertiary treatment involves sand filtration, activated carbon filtration, and the use of microalgae for the removal of heavy metals.
4. Emission rate (%) = (total water discharge/total water withdrawal) X100%
5. Total water consumption = total water withdrawal - total water discharge
6. Change in water storage volume = water storage volume in December 2020 - water storage volume in January, 2020 (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.)
7. Total recycled percentage (%) = (Total recycled water volume/total water withdrawal) *100%
8. The backfill data can be calculated with reference to the formula specified by the Science and Industrial Park Administration Bureau, or the data declared to the government each year.
9. The number of uses of a single drop of water = (running water usage + reclaimed water usage)/running water usage.
10. Water consumption baseline is daily water consumption volume of 5,000 metric tons in 2016.
11. Total recycled water volume includes wastewater recovery system and steam condensate recovery.

Water Recycling Measures

We strive to implement the water resources management mechanism in the plant area through innovative technologies to improve the efficiency of water resource usage and reduce the environmental risks of water shortage and water resource recycling in the plant area. In 2020, the amount of purchased steam was 307,376 metric tons, and the volume of recycled condensate was about 245,900 metric tons (calculated from 80% of purchased steam). The recycled condensate was mainly used as boiler feedwater and water supply, a small part of this was used in the cooling towers.

Measures	Description
Wastewater recovery rate up to **70**%	The measures used are different from those used by other traditional industries where partial or single recovery is used (such as the recycling of cooling tower wastewater only). OUCC expects to improve the wastewater recovery rate to more than 70%, which includes wastewater from processing as well as from cooling tower.
New technology	In the recycling process of processing wastewater and cooling tower wastewater, the wastewater is treated with UF/RO, a mature membrane filtering technology, and then recycled to the production processes in response to government policy on water conservation.
Enhanced recovery efficiency	To effectively enhance the recovery rate, our plant uses a two-stage RO process which increases recovery efficiency from 50% to 70%, and 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 recovery of cooling tower water by this process reduces the amount of acid and anti-scaling agents that used to need.





The First Company in Taiwan to Introduce ABR Technology

Although the RO process produces very pure water with high economic value, the wastewater produced by the process has a high ionic concentration with high COD. RO concentrated water is mixed with other low-concentration wastewater in the general water recycling systems, which makes it difficult to dissolve organic substance in the water environment.

In consideration of the effect of water quality on the environment, OUCC has been the first in the industry to introduce ABR technology for the treatment of concentrated wastewater from the RO process and to reduce COD and other environmentally harmful substances to fulfill our environmental responsibility.

The high-efficiency anaerobic bioreactor (ABR) employs new technology to break down industrial wastewater that is difficult to treat. This technology relies on special bacterial flora that form a biofilm on high-efficiency carriers. Under aerobic conditions, the bacterial activity is maintained by decomposition and elimination of the difficult-to-managed high chemical oxygen demand (COD) of the wastewater.

Wastewater Treatment & Discharge

The chemical plant wastewater contains incompletely reacted raw material, and/or in low medium of solvent used in production. 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 2020.

Effluent Quality Test

Item	H1/2020	H2/2020
	Detected value	
pH	8	8.3
$CHCl_3$	0.00215	0.00236
COD	32.4	44.2
NH_3	0.06	0.22
ArOH	ND	ND
NO_3-N	21.1	3.17
Particulate Matter	7.2	2.4

Wastewater Discharge

	2018	2019	2020
The total amount of wastewater discharged m^3/year	577,315	595,464	515,969
Discharge destination	Piped into the joint wastewater treatment plant and sea area in Kaohsiung		
Water quality and discharge	In line with the Effluents Standard/activated sludge treatment method		
Standards, methods, and assumptions	Joint wastewater treatment plant limit		

Note: 1. The total amount of wastewater discharge in 2020 was 515,969 tons, a slight discrease of 13.4% compared with 2019.
2. The amount and quality of water discharged from 2018 to 2020 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. Without proper management, it can cause a potential or real negative effect on local communities. We abide by the policies of the competent authorities and manage all our various environmental issues, such as pollution prevention and waste disposal. We have also established and followed the "OUCC CSR Policy" to assess environmental risks and possible future environmental problems for each of our many production processes. We invest in new equipment with a continuous effort to reduce emission and pollution.

In 2019, we used 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 environmentally protective equipment simultaneously. This allows us to ensure 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 and inside air is passed through an activated carbon filter and recirculated. Workers wear gas masks when working outside to prevent the inhalation of cumene vapor. Contact is 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.

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	2018	2019	2020
NO_x	7,456.87	2,272.05	5739.8
SO_x	8,221.11	4,793.9	1,857.35
POP	NA	NA	NA
VOC	44,857	44,568	40,765
HAP	NA	NA	NA
PM	2,242.06	990.53	478.82

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: Nitrogen oxides: 27,975 kg/year; sulfur oxides: 34,837 kg/year; volatile organic compounds: 56,105 kg/year; particulate matter: 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. In addition, recyclable items are entrusted to community charity organizations for recycling after preliminary classification in the plant.

We aim to achieve a cumulative waste reduction of 5%. Waste management and control was strengthened by an increase in the recycling rate compared to 2019. We have also established a "waste removal platform" to effectively handle the type and quantity of waste that is ready for removal at the plant. This has been effective in reducing the random disposal of unfamiliar waste by the personnel, which may adversely affect the environmental safety of the plant area.

Waste Disposal

Unit: tons

Type	Item	Method	2018	2019	2020
Hazardous waste	pH≤2.0 Waste acid	Chemical treatment	0.08	0.155	0.03
	Total weight		**0.08**	**0.155**	**0.03**
Non-hazardous waste	Waste iron barrels, lubricants, woods	Reuse	175.79	100.87	156.88
	Composting	Physical treatment of organic sludge	361.98	197.32	194.73
	Non-hazardous organic waste liquid	Reuse	0	0	0
	Waste mixed plastics, wood mixtures, oil mixtures, household garbage	Incineration	213.98	100.62	143.93
	Waste insulation materials, fire-resistant waste, Non-harmful slag	Landfill	163.98	47.36	95.99
	On-site storage (Note3)		0	0	0
	Others (Note4)		30.54	84.31	79.02
	Total weight		**923.59**	**530.48**	**670.54**

Note: 1. Reuse incudes energy reuse.
2. Incineration waste includes: Mixed plastics, wood mixtures, lubricants, oil mixtures, household garbage, etc.
3. On-site storage is based on the re-regulation of waste that has not been removed from the plant.
4. Other waste includes: 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.

Recycling Statistics

Unit: Kg

	Paper	Fluorescent Tubes	Plastics	Glass	Household Appliances	Total
2018	5,730	40	5,200	30	0	**11,000**
2019	5,500	0	5,000	150	100	**10,750**
2020	5,600	0	4,000	200	200	**10,000**

Environmental Issues Appeal Mechanism

The OUCC has stipulated internal and external communication procedures for environment, labor safety and health, and quality management. If external stakeholders wish to convey any environmental opinions or complaints, they can send them to the Safety and Health Department, and according to the contents, the authority will appoint a specialist from the Central Safety Committee to communicate with the external stakeholders within the shortest possible time, and will 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#2302)". If an environmental issue arises, OUCC can handle and respond to it immediately. With effective management, there have been no environmental complaints for 8 consecutive years.

The Environmental Protection Expenditures

Unit: NT$

Item	2018	2019	2020
Environmental protection expenditure	36,530,021	17,784,642	18,373,187

2020 Environmental Regulation Management Improvement Mechanism

Item	Amount (NT$)	Corrective Action
A freight company was appointed to handle the sludge removal, and in the process of reporting, the vehicle tail number was omitted, which is in violation of the Waste Disposal Act.	6,000	1. The person-in-charge (PIC) is now requested to assume all trucks come with a trailer car. A note is made of any that do not have a trailer and "NO" is penned in the "trailer car" field on the form. 2. The "trailer car" field was added to the form.

Note:There were no major chemical leaks in 2020.

Social Inclusion

OUCC applies its corporate spirit of "taking from society, giving back to society". Through communication and cooperation, we sponsor charitable organizations or charitable foundations to which our affiliated companies belong in various forms to participate in activities. In addition, we also maintain partnership with suppliers and actively invite suppliers and employees to participate in social welfare activities with the support of enterprises.

The OUCC has 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 spontaneous employee donations to disadvantaged groups and volunteer work such as donating goods to children's homes, supporting Shanwei primary school by providing new desks and chairs, providing emergency assistance for residents of Linyuan district, and participating in beach cleaning activities. The total amount donated to disadvantaged minority and charity groups in 2020 exceeded NT$ 3.25 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 many industries, including 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 and 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. This includes children in particular, the rural areas, long-term care and the general public, in which we strive to create synergy and to contribute to society.

Community Environment Green Beautification

To make a contribution to air purification in the industrial zone by the development of a green roadside landscape, OUCC applied to the Ministry of Economic Affairs to sponsor environmental maintenance, adopting about 116 trees, 2,028 m^2 of sidewalk and 4,020 m^2 of roads in 2020. The company is responsible for cleaning, watering, sanitation maintenance, pest control, road repair and cleaning up after a natural disaster, as well as supplementary planting according to plant density.

Year 2020 Contributions to Society	● Donate to care for the disadvantaged and emergency relief ● Sponsorship of local festivals and events ● Donation of COVID-19 epidemic prevention supplies ● Donation to Far Eastern Y. Z. Hsu Science and Technology Memorial Foundation for the construction of the International Conference Center	Total Donation over NT$ **3.25** Million
Year 2021 Expansion of Social Participation	● Nonperiodic participation in blood donation drives ● Donations to organizations that support disadvantaged groups ● Volunteering in social care activities ● OUCC sponsors the procurement of COVID-19 pandemic prevention supplies	

Donation

Unit: NT$ ten thousand

Type	2018	2019	2020
Charity	426	14	166
Local Participation	160	163	159
Goods Donation	2	0	0
Total	588	177	325

Cash Donation Activity

Recipient	Activities	Amount (NT$)
Linyuan District Office Coordination	Neighborhood fund sharing (promotion of government decrees and care for the disadvantaged, scholarships, emergencies, observation, repairs, etc.)	858,762
Linyuan district offices of all villages and community associations	New Year, Dragon Boat Festival, Mid-Autumn Festival and other folk festivals	297,000
Linyuan Village Promotion Association, Clubs, Associations	Sponsorship of community clubs, associations, observation of villages, announcement and study activities	194,000
Linyuan Village Promotion Association, Clubs	COVID-19 prevention supplies, hiking, beach cleaning	108,000
Linyuan Village Promotion Association, Volunteer Fire Station, Temples, Clubs	Year-end party, social gatherings, community fairs	72,000
Petrochemical Industry Trade Union, Association, Clubs	Games	22,000
Longji Temple, Donglong Temple, Sanchin Temple, etc.	Sponsorship of temple festivals, temple fair and blessing activities	20,000
Temple, Club, etc.	Caring for the disadvantaged	10,000
Residents in Linyuan	Emergency Allowances	8,000

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 achieve protection of the global environment and the safety and health of our employees.

In the spirit of supporting 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 “recognizing the chemical industry’s responsibility to Taiwan society and continuously improving environmental, health and safety performance”.

2020 Sustainable Performance

- Accumulated record of **4,910,000** disaster-free man-hours
- The **10** operational environment tests are in compliance with the relevant standards
- Labor representatives accounted for **50**% of the occupational health and safety committee members

Safety management is one of the most important issues in the chemical industry, and is also the primary concern of our stakeholders. Therefore, OUCC continues to work on the internal chemical safety management system for a long time, applies the concept of potential risk assessment as "only safer, no safest" in production and manufacturing processes, and evaluate 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 apply simulation to predict the occurrence of possible disaster situations, and make appropriate corrections to address deficiencies or shortcomings, continuing to improve safety management at all our plants.

2020
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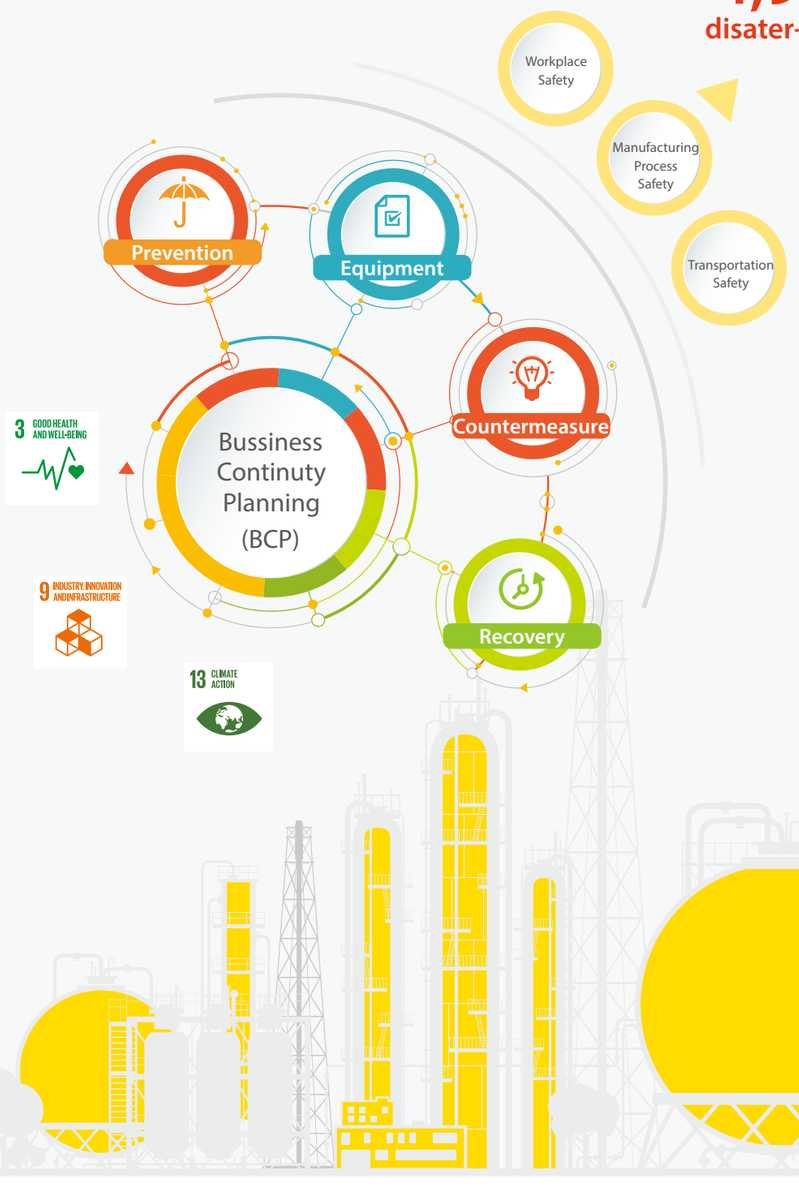


Zero-pollution Workplace

The OUCC, upholding the spirit of self-discipline, has joined the Taiwan Responsible Care Association (TRCA) to promote responsible care, and taken up six standard management guidelines, 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, 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.



Record of Awards

Year	Awards
2017	● With the smoke-free and health promotion measures implemented in the workplace of OUCC to establish a quality & healthy work environment, OUCC was rewarded the Badge of Accredited Healthy Workplace issued by the Health Promotion Administration, Ministry of Health and Welfare. ● The Plant participated in the "2017 Kaohsiung City Promotion of the Workplace 4-Cancer Screening Incentive Plan" of the Department of Health, Kaohsiung City Government and won the award. ● Occupational Safety and Health Administration, Ministry of Labor authorized the Industrial Safety and Health Association (ISHA) of the R.O.C. (Taiwan) to issue the "2.95 Million Accident-Free Man-Hours" certificate to the OUCC Linyuan plant for encouragement.
2018	● Invited to co-organize the "Linyuan Jhongyun Beach Autumn Cleaning Activity" held by the Environmental Protection Bureau, co-organized the event successfully and received a Certificate of Appreciation from the Environmental Protection Bureau.
2019	● 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	● Received the "Self-Response to Global Energy Conservation Activities" certificate of appreciation from the Environmental Protection Bureau. ● Assisted in the "Dafa Industrial Park factory pollution prevention exchange workshop", and received a certificate of appreciation from Dafa Industrial Park Service Center, IDB, MOEA. ● 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 IDB, MOEA as the outstanding performance company for 2020 self-reduction in greenhouse gas emissions.

EO Exchanges at Dafa Industrial Park Service Center

The director of Dafa Service Center, professors of Fooyin University, and representatives of a hardware manufacturer, a total of 8 people, came to the factory to conduct an EO emission treatment technology exchange meeting, mainly due to the inappropriate measure of the hardware manufacturer's EO exhaust treatment that polluted the environment.

At the workshop, OUCC's experience in the handling of EO was affirmed and it is hoped to provide guidance and direction for improvement of the situation. After the meeting, both the Service Center and Fooyin University issued OUCC with certificates of appreciation, enhancing the company's CSR image.

Comprehensive Environmental Safety and Health Management

The OUCC has received ISO 14001 environmental management system as well as OHSAS-18001 occupational health and safety management system certifications, ensuring standard control and compliance. The OUCC incorporated ISO 45001 in 2019, which passed the verification in May 2020 and obtained a certificate. 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 425 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: 343; employee coverage rate of 80.7%.

Solid SHE and Environment Preservation System

The OUCC has an Occupational Health & Safety Committee. The 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 announced to all employees. The chief plant manager is the appointed convener and there are 14 committee members, including 7 labor representatives, which account for 50% of the members.

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 member trained and qualified member

Health risk assessment profession:
Plan for placement of dedicated health risk assessment personnel in 2021

Diversified Health Management Project

OUCC promotes a healthy employee workplace and provides comprehensive healthcare resources that focus on the health of employees. In terms of corporate social involvement, OUCC has set up complete evaluation mechanisms and health management programs for the families of employees and for nearby communities. 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. This service helps employees to manage their own health, and creates a friendly and healthy work environment.

Program	Content
Health care measures	1. All our plants have first-aid kits in place, we keep them clean and replenish complementary item. 2. Set up the "Automated External Defibrillator (AED)". 3. There is a full-time physician and a nurse stationed in the Linyuan plant to provide employees with healthcare and counseling.
Health checkup	1. We comply with "Labor Health Protection Rules" by the implementation of health checkups and further medical review for employees. We provide better health checkup benefits than are required by the relevant laws and regulations. 2. Annual physical examination for managers and above, and an additional physical examination for senior managers is conducted every two years. 3. 284 employees participated in 2020, with participation rate of 100%. 4. A health report is provided with checkup items and descriptions, and health education are also provided. 5. A health check follow-up procedure has been established that assists an employee with any abnormal findings to get further medical review and treatment. 6. 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	1. Assist employees and their families to get treatment and registration service. 2. Provide individual counseling service, and advise workers to avoid taking up high-risk jobs. 3. Around 100 employees had health counseling in 2020. 4. Conduct occupational disease risk assessment for all employees at the Linyuan plant; no employee is diagnosed with any occupational disease in 2020, 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). 5. Statistical study and classification of the annual health exam results is regularly carried out to track employees with an abnormality, or at high risk. The full-time plant physician will determine the risk factor and conduct individual counseling or health education, and provide necessary medical treatment.
Health education	1. In support of government policy, health units regularly visit the plant to give vaccination against influenza. 2. Health education can be arranged at any time if required. For example, in the event of an epidemic situation. 3. Invite external lecturers for the safety and health seminars held at the plant. 4. Cooperate with local health units to conduct health courses and promotions, and to align with government's policies. 5. Safety is advocated on a daily basis by E-mail to all employees and suppliers. The topics of safety promotion in 2020 include: industrial safety, environmental protection, sanitation, fire protection and epidemic. 6. An alert announcement would be made when the air quality measured by the Environmental Protection Agency displays dangers to health to remind employees to wear mask outdoors and reduce outdoor activities.
Health promotion activities	No health promotion seminar was held in 2020 due to COVID-19 pandemic. All the health promotion and pandemic prevention information was placed on the company website and published in company bulletins instead.
Preventing exceptional work-related illness	1. Establish the procedures for "Prevention and Management of Exceptional Work-related Illness and Occupational Diseases" 2. Based on health inspection reports, overload charts, and six months of overtime statistics, we performed a plant-wide employee risk identification assessment. As a result, no employee required medic counseling in 2020.
EAP	1. Compile "Daily Safety Promotion" & "Epidemic Prevention Promotion" information and send it to all employees for reference. 2. The plant nurse in the medical office is available for telephone consultation and provides diversified assistance to employees. 3. 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. 4. Annual recreational activities are organized for employees to encourage outdoor activity and help keep the physical and mental health of employees in balance. 5. 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.
Dietary and food safety	1. Inspections of the hygiene at food suppliers are carried out from time to time. Checks are made on such matters as the ingredients used, food hygiene, food quality and work place hygiene. 2. The food companies chosen comply with all legal requirements and have product liability insurance.
Program for the prevention of human-induced hazards	1. 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. 2. Establish rules for the management of personal posture operations in view of the injuries caused by improper posture of employees in the operation. 3. 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 done at each quarterly occupational safety meeting.
Preventing for occupational diseases	1. Conduct health management tracking for personnel who are particularly hazardous to health operations. 2. In 2020, three employees needed Specialized Health Checkups, two 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 concerned about the issue of employee overwork. OUCC Linyuan plant has established, implemented and promoted "Prevention of Disease Caused by Abnormal Workload Procedures", and taken safety and health preventive measures related to overwork prevention to ensure the physical and mental health of employees in the plant, further to 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 2020, there was no occurrence of employee overwork.

- **Mechanism 1:** Employee attendance is managed by an electronic system.
- **Mechanism 2:** The Linyuan plant "Occupational Safety & Health Committee" holds meetings every three months. The plant nurse reports health service-related matters with regard to the prevention of bad health conditions triggered by abnormal workload and all the health management, occupational disease prevention, health promotion and protection are reviewed at the meeting.
- **Mechanism 3:** Employees are required to complete a health checkup form. After a health check, the health checkup form has been submitted, as well as an occupational health promotion questionnaire, and the 6-month overtime hours calculation. This is done to identify any high-risk employees based on the Industrial Safety and Health Association format.
- **Mechanism 4:** Personal fatigue risk factors are assessed as well as working patterns and environmental risk factors. The monthly overtime hours of employees with abnormal workloads are taken into account and health management measures are taken according to the level of workload to safeguard employee health.

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	This provides physical and mental health care during pregnancy, childbirth, or nursing period.
Plan	"Maternal Employee Health Plan"
Measure	● 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 is 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 work load 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 and control system. The installed underground monitoring wells, flammable gas monitoring stations, 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 located 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. CO_2 concentration detector is 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

2020 Environment Operational Test Results

Item	Content	Frequency	Inspection results
Purity Inspection of the drinking water dispensers	Detection of drinking water quality	Quarterly	
Personal hearing tests	Measurement of accumulated personal noise exposure	Biannually	
Reproductive toxic chemical detection	Detection of the concentration of ethylene oxide	Biannually	
Chemical detection	Detection and measurement of the concentration of chemicals such as methanol, ethylene glycol butyl ether, n-butanol and sulfuric acid in the working environment	Biannually	
Central AC indoor CO_2 concentration detection	Indoor CO_2 concentration detection	Biannually	
Underground monitoring wells	Soil samples were collected for inspection at 18 groundwater monitoring wells	Annually	
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 risk. 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 ❶ significant, ❷ high, ❸ moderate, ❹ low, and ❺ insignificant, are used as priorities for improvement, and the countermeasures are as follows:

❶ **Major risk:** items of highest improvement priority, with engineering improvements as the main focus.
❷ **High risk:** items of second highest improvement priority, with engineering improvements as the main focus and administrative management as assistance.
❸ **Medium risk:** items of third improvement priority, with administrative management as the main focus.
❹ **Low risk:** items of fourth improvement priority, with administrative management as the main focus.
❺ **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 analysis of the existing processes were all completed.

Each unit carried out general hazard identification using the risk ratings chart; a total of 20 improvement cases were tracked in 2020.

Risk ratings	Risk classification	Response measures
Class 1	Very high risk	• The "Occupational Safety and Health Risk & Management System Risk/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	• The "Occupational Safety and Health Risk & Management System Risk/Opportunity Assessment and Control Measures Form" should be submitted. • If the severity is A, discuss the comprehensiveness of the current protective and control measures, carry out improvement plans, and enhance response capabilities immediately. • If the severity is B or C, further discussions will be made to decide what improvements need to be made.
Class 3	Mid-high risk	• 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	• 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	• 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	• 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 zone, 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	• Emergent activation of the ESD system. • Shut off isolation valve.	• 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). • Equipped with DCS production process with chain logic system. • Press buttons for emergency stop are 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.
Emergency response of truck leaking upon unloading	• 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.	

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 expectation of stakeholders on the environmental safety and health.
- "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 that need 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

Article 20 of 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 as a 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 demerits will be handled according to Article 33 (termination of contract).

Routine Safety and Health Education Training

- Course theme: Safety, Health and Environmental Protection.
- Course content: This included the prevention of common disasters in petrochemical plants, the six major food groups, healthy dynamic living - aerobic exercise, introduction to common hearing disorders, control and management of hazardous air pollutants from petrochemical processes, PM2.5 air pollution and employee health.
- Employee feedback: Employees may voice opinions and ask questions during courses for effective interchange with their lecturers.

2020 Safety and Health Education and Training Results

Education and Training Project	Frequency	Hour	The number of participants
Work safety access card training	14	1hr/time	160
New recruit training	11	6hr/time	23

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?

Noise Prevention Measure

1. Notices of applying ear protection are displayed at all the entrances to the plant with noise pollutant.
2. Personal hearing tests are carried out every six months.
3. Plant personnel must wear earplugs or earmuffs before entering noise polluted spaces.
4. Every employee is arranged for an annual precision hearing test. No employees experienced hearing disorders in 2020.
5. A full-time physician and a nurse are stationed in the plant and provide employees with health checkups and healthcare.

Non-disaster Man-Hours

To enhance the safety awareness of all our workers and contractors and 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 (OH&S) with personnel key performance indicator (KPI) as a criteria for employees' performance bonuses, which means bad performance results in bonus deducton.
- We encourage all personnel to report false alarm incidents.
- The Plant supervisor holds a safety meeting with contractors on Thursday fortnightly to communicate, promote, share experiences, and coordinate all necessary safety and health issues.
- An "OUCC Safety and Health Line Group" has been set up and the Plant supervisors and contractor's labor safety personnel are obliged to join, to reflect, share and communicate with each other immediately.
- From 2013.03 till 2020.12, accumulated safety manhours at OUCC totaled 4,910,000 hours. From 2019.01 to 2020.12, safety manhours of contractors amounted to 543,000 hours, contractors numbered 136.
- OUCC aims to achieve 5 million safety man-hours, and contractors of 990,000 safety man-hours in the mid- and long-term stages.

Work Safety Management

Through regular meetings of the Occupational Safety & Health Committee and Contractor Agreement Organization, 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. In 2020, the improvements made were as follows:

Improvement on/off switch

The platform ladder is added with a crossbar extending at least 60 cm above the platform

Purpose	Improvement Items and Procedure	Result
The part of the ladder that extended outside the RTO sampling platform had no support railings.	New crossbar was added to the platform ladder that extend at least 60 cm from the top of the platform.	Achieved
The diversified chemicals used in the pilot plant were operated in a closed working environment with poor ventilation.	Install fans at the feeding site.	
Indoor air quality control has been improved in terms of the complaints of foul odor emitted by neighboring plants.	1. Internal/external circulation switches have been installed to the air-conditioning systems of each control room to prevent outside odors from affecting the health and working efficiency of the staff. 2. CO_2 concentration meters have also been installed to monitor air quality. 3. Install an activated carbon air purifier in the gas control room.	
The window air conditioner in the laboratory emitted low frequency noise.	Carry out an overhaul of the compressor and other machinery to decrease the noise level.	

List of Occupational Injuries and Illnesses of Employees and Contractors in 2020

Scope		OUCC			Contractors		
Gender / Item				Total			Total
Total working hour (Hour)			599,602			270,908	
Number of fatalities as a result of work-related injuries (persons)		0	0	0	0	0	0
Fatalities as a result of work-related injuries rate (%)		0	0	0	0	0	0
Number of high-consequence work-related injuries (persons)		0	0	0	0	0	0
high-consequence work-related injuries rate (excluding fatalities)		0	0	0	0	0	0
Number of recordable work-related injuries (per-sons)		0	0	0	0	0	0
Recordable work-related in-juries rate (%)		0	0	0	0	0	0
Type of work-related injury			-			-	
Number of fatalities as a result of work-related illness (persons)		0	0	0	0	0	0
Fatalities as a result of work-related illness rate (persons)		0	0	0	0	0	0
Number of cases of recordable work-related illness		0	0	0	0	0	0
Type of work-related illness			-			-	

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

Worker Participation, Consultation, and Communication on Occupational Health and Safety

The "Occupational safety and health management unit" is responsible for the planning, supervision, and promotion of labor safety and health related matters. OUCC held a "safety and health consultation meeting" and "occupational safety and health committee meeting" every quarter, and were responsible for the review.

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

Environmental Safety and Health Risk Assessment and Improvement Results

The evaluation mechanism

The PDCA cycle 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 before adding new equipment or new chemical substances. If the risk score is between Class 4-Class 1, control measures are based on priority, including elimination, replacement, engineering controls, signs/warnings/management and control, and the use of personal protective equipment, are all considered for its reduction.

Improvement Case:

Preliminary Hazard	Level before Improvement	Safety Improvement Mechanism	Level after Improvement
EOD operator at the stock feeding area 1. The manual handling weight that exceeds normal loading can cause personal injury. 2. The stock feeding of powdered materials carries a risk of dust explosion.	1	• The purchase of an electric pallet truck, an FIBC automatic bag opener, and modification of the feeding platform to include both lifting and lowering function. • The addition of logic control connected to a moisture meter on powdered material feeding nozzles.	6

Zero Accidents in Transportation

Chemical transport can be divided into inland transport and marine transport. Inland transport can be further divided into pipeline transport, railroad transport, and road transport. Most of the chemicals in Taiwan rely on road transportation, but because of the small geographical environment and the lack of road planning for chemical transportation, if an accident occurs, it may immediately endanger the lives and property of the people nearby and cause significant losses to 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 2020.

Transportation Risk Assessment

All OUCC products are transported by the tankers outsourced from external suppliers; therefore, the transport contractor management is of particular importance. Due to the main risk of chemical transport is from traffic accident which may cause the tanker to overturn, and result in the effusion of chemicals. We conduct necessary transportation risk assessment.

The chemical hazard categories include explosive, corrosive, flammable, oxidizing and toxic, which not only endanger the life and property safety of transport personnel, road users, rescue workers and nearby residents, but also undermine the natural ecological environment, and the social costs resulted in is huge. The direct cause triggering the hazardous substance leakage can be divided into four factors: human error, vehicle failure, storage equipment, road and environment.

Risk factor	Possible incidents
Human error	1. The inlet valve is not closed properly after a tank has been filled. 2. The tanker driver fails to fully comply with traffic rules, for example: speeding, drunk driving, running red lights, keeping no safe driving distance, etc. 3. Other road users fail to follow traffic rules and collide with the chemical tanker, or cause the tanker driver to veer and lose control.
Vehicle failure	1. Vehicle mechanical failure: brakes, steering tire blowouts or punctures. 2. Transport tank not correctly coupled with the vehicle or the coupling device has been damaged.
Storage facilities	1. The tank has been used for too long and may be corroded or defective in other ways. 2. The chemical load is incompatible with the tank material. 3. The internal pressure is way beyond the tank tolerance. 4. Leaking valves or leaks from pipeline accessories or other parts.
Road and environment	1. Poor geometric road design: too sharp curves, steep hills, obstructed view of the road, etc. 2. Unclear and insufficient traffic direction and warning signs. 3. Poor road conditions and obstructions due to weather.

Freight Forwarders Management System

We develop strict management standards to ensure that forwarders jointly fulfill their security commitments since all the tanker transportation in OUCC is outsourced. Apart from compliance with the minimum requirements of the laws and regulations in the country, we also ask our freight forwarders 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 dispatchers.

Process	Control Mechanism
Operational Regulations	1. **Contract specifications:** Supplier conduct is regulated by comprehensive clauses in the transport contracts. Forwarders are requested to comply with the signed admission management document that is included in the contract annexure: A. Contractor's Operation Safety Commitment to OUCC while Working in the Plant B. Tanker Driver Compliance Guideline C. Tanker Operational Safety Management Handbook 2. **Tanker loading:** The hazardous products road transport prospectus and material safety data sheets must be submitted to the local motor vehicle supervision office for the issue of a temporary permit that must be on board with the driver before loading and shipping. The driver must drive on the scheduled transportation routes at the stipulated times. 3. **Vehicle hardware requirements:** Use of retreaded tires is strictly prohibited for the entire tanker (including front, back or onboard trolley); each tanker should have at least two functional (speed and image) of dashcams, 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. 4. **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	1. **Control mechanism:** Implementation of personnel control, as well as vehicle and cargo permits, together with tanker weighing and driver ID, strictly controls the admission of drivers, vehicles and their cargo. 2. **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. 3. **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. 4. **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	1. **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. 2. **Meeting Results:** Due to COVID-19, 2020, OUCC convened one meeting with tanker transportation companies, one with gas transportation companies and one with general container and truck transportation companies. 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. 3. **Goal:** At the 2020 transportation meetings, it was decided that to ensure the rights of drivers, all transportation companies should increase drivers' "employer's accident liability insurance" coverage to at least NT$5 million from the beginning of 2021.
Emergency Response	1. **Emergency response mechanism:** Each transport company is required to provide an Emergency Response Prospectus. 2. **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 carriers 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.		
		H1/2020	H2/2020
	Training topic	Case discussion and sharing of emergency response procedures (report and evacuate), the filling of liquid gas, defensive driving, unusual incidents	Case discussion and sharing of education, reporting, firefighting and first aid, loading/unloading standard operation, defensive driving, hazardous materials labeling and knowledge, unusual tanker equipment incidents
	Number of Participants	26	25
	Number of Vendors	3	3
	Participation Rate (%)	100	100
	Note: Participation Rate=total forwarders participated in the training/total forwarders in 2020		
Diversified Auditing	1. **Onsite audit:** the transport company is subject to an onsite audit every year that is part of the vendor audit. To ensure that the transport companies attach enough importance to the quality of transportation, OUCC formulated a new regulation in 2018: "The results of the onsite audit shall be the basis for the distribution of freight charges and volume ratio for the following year." 2. **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.		

Tanker Transportation Safety Management Mechanism

1. The headlights of all tankers on the move must be on at all times.
2. Transportation companies whenever on OUCC Linyuan premises are required to comply with government laws and regulations, including the "Labor Standards Act", "Occupational Safety and Health Act", "Road and Traffic Safety Regulations", "Regulations of Hazard Communication on Dangerous and Harmful Materials" and all other relevant laws.

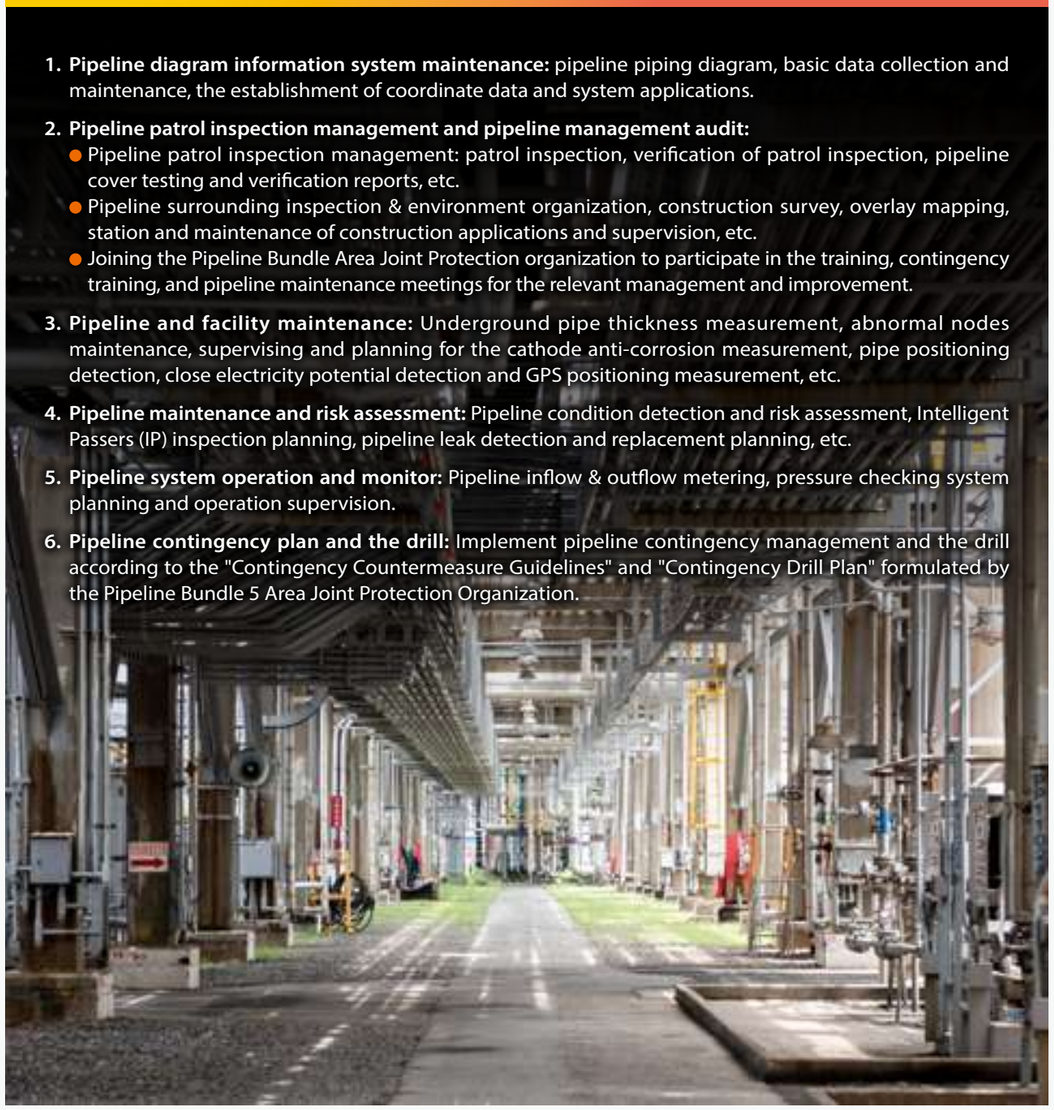
Pandemic Prevention Policies for Transportation

1. Before entering the plant, all drivers had their temperature taken at the guard's office. Anyone with a temperature above 37.5℃ was denied entrance to the plant.
2. Between 2020/02 and 2020/06, a "declaration of health" had to be completed by everyone entering the plant.
3. Contractors, subcontractors, drivers must wear masks at all times when inside the plant.
4. On-site employees who come in contact with the contractors, subcontractors, drivers must also wear masks at all times.
5. Contractors, subcontractors, and drivers were prohibited from entering the control room, office, warehouse and other indoor spaces.
6. When weighing, drivers were required to sanitize their hands. Anyone who refused to comply was barred from continuing the operation.

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:**
   - Pipeline patrol inspection management: patrol inspection, verification of patrol inspection, pipeline cover testing and verification reports, etc.
   - Pipeline surrounding inspection & environment organization, construction survey, overlay mapping, station and maintenance of construction applications and supervision, etc.
   - Joining the Pipeline Bundle Area Joint Protection organization to participate in the training, contingency training, and pipeline maintenance meetings for the relevant management and improvement.
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." In addition, the following comprehensive emergency response protocols are used to ensure that all employees will respond in the same coordinated way in the event of an accident:

1. The OUCC field pipeline leak emergency response principles
2. The EG Plant raw materials field pipeline transportation procedures and nonconformity process
3. The OUCC Linyuan Plant "Rules Governing Oxygen and Nitrogen Gas Transmission Pipeline Nonconformity"
4. Nitrogen gas pipeline leak emergency response plan

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 to reduce the accidents of chemical leaks. The task force arranged the groups according to the nature of the emergency response needed. We are confident that the members selected have sufficient knowledge and experience to effectively reduce the impact of an emergency and to control the escalation of any such incident.

Emergency Response Training

Types of Emergency Response Training	Session/Time	Number of Participants
Tabletop exercise	34 sessions	517 persons
Middle and the night shift drill for fire equipment	17 sessions	237 persons
Quarterly response drill	16 sessions	134 persons
Annual response drill	5 sessions	77 persons

OUCC carried out 393 hours of off-site "Emergency Response Team" training covering general emergency response exercises, fire-fighting equipment operation, and mobilization of the emergency response teams by external experts. Staff from the Linyuan fire brigade were invited to instruct our personnel in the operation of the plant fire-fighting equipment for a total number of 23 participants in 2020. In addition, a two-stage process, 4 emergency response training courses, were held for all staff in the Linyuan plant in the first and second half of 2020, for a total of 54 participants.

To ensure a convergent result for each emergency response, all emergency response plans including compound disaster were consolidated into one in the event of fire or leakage, while emergency response team members composed and operation procedures standardized (SOP), to guarantee the comprehensive countermeasuring mechanism and reinforced capability can be fully employed upon emergency.

Compound Disaster Prevention and Emergency Response Plan

Potential Disaster	Emergency Response Plan
Leak, fire	Emergency response team members and missions
Transportation incident	Transportation incident emergency response operation
Typhoon and storm	Typhoon and storm graded emergency response plan
Earthquake	Earthquake emergency response procedure

Emergency Response Mechanism for Liquid Leaks

1. A transportation accident shall be reported immediately, depending on the situation and severity, in accordance with the "OUCC Emergency Response Report Flowchart."
2. The Chief Plant Manager will use the reporting system to dispatch personnel to the site. The Environmental Safety (environmental protection related follow-up), Production (chemical-related follow-up), and Logistic (transport company vehicle scheduling and replacement related follow-up), shall all be informed and assistance may also be requested from the Maintenance staff if necessary.
3. The SHE Department shall contact the local fire brigade (119), environmental agencies, transportation agencies, the Executive Yuan EPD Southern Taiwan environmental toxic disaster response team, ERIC national toxic disaster counseling center, or other toxic chemical disaster prevention center and chemical disaster relief organization support units to request support and assistance.
4. The Logistic Team shall dispatch one emergency vehicle equipped with emergency response equipment with all the necessary personnel to the accident scene.
5. Site commander: Local relief personnel assigned to the accident scene shall act as the site commander and coordinate operations with the environmental safety personnel to manage disaster relief. To secure the safety of personnel, unauthorized persons should be evacuated from the accident scene.
6. Warning signs should be set up around the scene of the accident to prevent secondary damage, the area should be cordoned off and access should be denied to unauthorized persons.
7. An announcement should be made by the spokesperson of the Linyuan Plant.
8. Request the transport company to arrange trucks and cranes for backup and to recover the damaged or undamaged barrels or shift the tank and return it to Linyuan Plant for further processing. Safety must still be the primary consideration when processing.
9. Contact a waste disposal company that is equipped with vacuum slurry tankers as needed to help recover and transport the chemicals (such as acids, alkalis, etc.) either in or spilled out of the tanker, clean the container, and drain the liquid from gutters and return it to the Linyuan Plant for further processing.
10. Decontaminate the ground and clean the gutters until test samples are approved by the local Environmental Protection Bureau.
11. Take photos of the chemical barrels, vacuum slurry tankers, and contaminated soil and oil absorbent sheets removed from the accident site and returned to the Linyuan Plant for the records and future reference.
12. Accident review: The Logistic Team shall complete an accident report and hold a meeting with the relevant units and transport companies to discuss prevention of the recurrence of similar incidents.
13. The liquid recycled in the vacuum tankers should be discharged at the location designated by the production and the environmental protection units. The discharge pipe shall be covered by a filter to block debris. The production unit must deliver the recovered liquid to the wastewater plant spare pool at the manufacturing unit after an analysis of chemical concentration and COD value.
14. The contaminated soil and oil absorbent sheets recovered must be handled by waste disposal vendors qualified by the Environmental Safety unit.

Liquid Ammonia Tanker Leakage Emergency Response Drill

Simulation Scenarios

In an emergency drill simulation, Chi-Hsen Transportation's liquid nitrogen (LN) tanker left OUCC and was on its delivery to the Luzhu Plant of Eternal Materials. As the driver passed by the intersection of Luke 10th and Luke 5th Roads in the Luzhu Science Park, smoke was seen coming from a back wheel on the tanker's passenger side. The driver immediately stopped the truck and got out to check. Flames were seen as well as smoke. The driver immediately used a tanker fire extinguisher to put out the fire, and placed traffic cones on the road to alert traffic. The "Emergency Response Team" was mobilized to carry out an emergency rescue.

Exercises Highlights

1. All drivers and the response team must be familiar with the disaster reporting procedure and all the response activation processes.
2. Comprehensive drills are used to familiarize all emergency response units with their roles and tasks in all emergencies and cases of accident.
3. They must be familiar with, and have the ability to identify and respond to any unexpected incidents that can result from such transportation accidents and emergencies.
4. Through joint exercises and support of the industry, we are able to eliminate disasters and achieve the goal of protecting employees, the public, and the environment.

Assurance Statement

SGS

ASSURANCE STATEMENT

SGS TAIWAN LTD.'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE ORIENTAL UNION CHEMICAL CORPORATION.'S CORPORATE SOCIAL RESPONSIBILITY REPORT FOR 2020

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 Corporate Social Responsibility Report for 2020 (hereinafter referred to as the CSR Report). 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 on-site verification (2021/04/26~2021/05/28). 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 CSR Report of 2020 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		Level of Assurance
A	SGS ESG & SRA Assurance Protocols (based on GRI Principles and guidance in AA1000)	n/a
B	AA1000ASv3 Type 1 (AA1000AP Evaluation only)	Moderate

Assurance has been conducted at a moderate level of scrutiny.

TWLPP 5008 Issue 2104

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 (Core) (2016)
2	AA1000 Accountability Principles Standard (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, CSR 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 and 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, CSR 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 identifying impacts that fairly 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. Impacts related to material topics were in place at target setting with qualitative and quantitative measurements and evaluation.

GLOBAL REPORTING INITIATIVE REPORTING STANDARDS CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

The report, OUCC's CSR Report of 2020, 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 OUCC's involvement with the impacts for each material topic (103-1), and how efforts were given to mitigate the impacts. When reporting on goals and targets for each material topic, the expected results are suggested to be set, if applicable, with quantitative objectives.

Signed:
For and on behalf of SGS Taiwan Ltd.

AA1000
Licensed Report
000-8/V3-UUSG6

David Huang
Senior Director
Taipei, Taiwan
15 June, 2021
WWW.SGS.COM

Management Approach of Material Topics

SDGs	Material topics	The purpose of the management approach	Policies	Goals	Grievance Mechanisms	Assessment Mechanisms	Management Approach and Results (page)
8	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	38-42
8, 10	Market Presence	Ensure the company's remuneration policy and company standards comply with government regulations and the rights of employees.	"Rules Governing the Payroll"	Transparent governance	Stakeholder contact line (employee) 02-2719-3333#281	Domestic socioeconomic law Labor Standard Act	73-76
6, 7, 9, 11, 12, 13, 14, 15	Energy	Keep close track of its own energy consumption, and formulate the short-, medium- and long-term goals of energy and resources management in OUCC according to domestic laws and regulations and international environmental energy management trends.	"Safety, Health and Environmental Protection Policy"	Use carbon emissions in 2015 as the base year, and reduce by 1% every year.	SHE contact: she@oucc.com.tw	ISO 14001 ISO 50001 ISO 14064-1 Environmental regulations	88-92
	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 20% reduction in mid-term			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 in OUCC according to domestic laws and regulations and international environmental energy management trends.	"Safety, Health and Environmental Protection Policy" "Domestic and Foreign Environmental Regulations"	Use carbon emissions in 2015 as the base year, and reduce by 1% every year			89-91
	Effluents and Waste	Carry out the Directions for 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" "Domestic and Foreign Environmental Regulations"	Meet regulatory requirements, zero environmental incidents			101, 104
	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.					105
3, 5, 8, 9	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 have set up 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 socioeconomic law Labor Standard Act	62-67
	Occupational Health and Safety	Take an initiative to join the "Taiwan Responsible Care Association (TRCA)" to continuously improve and increase the health and safety performance in the plant.	"Labor Health Protection Rules" "Responsible Care Charter" "Various Disaster Emergency Response Plan"	Zero workplace disaster		ISO 45001 Occupational Safety and Health Management System Labour union, Collective agreements Domestic laws and regulations	113-132
	Customer Privacy	Ensure that all personal customer data are rigorously protected.	"Business Integrity Principles" "Information Security and Confidentiality Policies"	Zero customer personal data leakage	OUCC 02-2719-3333#331	The grievance mechanism, internal audit, and corporate governance evaluation by the Taiwan Stock Exchange	76

GRI Standards Index

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Note: "*"are volutarily disclosed material topics of OUCC.

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