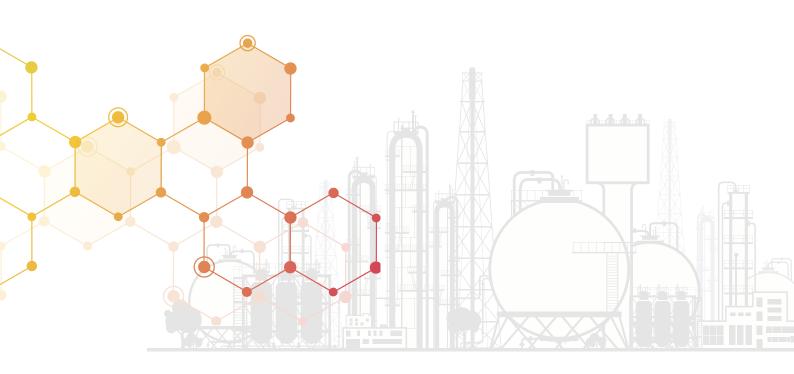


ORIENTAL UNION CHEMICAL CORPORATION



The 2016 Corporate Social Responsibility Report



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EDITING PRINCIPLE

Welcome to the Corporate Social Responsibility (CSR) Report of the Oriental Union Chemical Corporation (stock code: 1710, hereinafter referred to as the "OUCC") published for the third time in 2017. 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 persistence in response to the development of green chemistry and the realization of sustainable action in the chemical industry (quality and transport safety, occupational safety and health, and environmental protection) through the information disclosed in the CSR report.

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

Reporting period and organizational boundaries

The CSR Report discloses the CSR management policy, key issues, responses, and action performance of the OUCC in 2016 (Jan. 1 to Dec. 31). Some issues that go back to 2014 or 2015 have been included to ensure a comprehensive report of project performance and outcome.

To properly demonstrate the effort of OUCC in CSR, the content and data of this CSR report includes only the performance data of the OUCC Headquarters and the Linyuan Plant. The subsidiaries listed in the consolidated financial statement of 2016 included Tong Fu Investment Corp., Pacific Petrochemical (Holding) Ltd., OUCC (Bermuda) Holding Ltd., Oriental Petrochemical (Yangzhou) Corp., Far Eastern Union Petrochemical (Yangzhou) Ltd., Tong Da Gas Industries (Yangzhou) Limited.

Frequency of publication: Annual

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Writing reference and guarantee

This CSR Report is prepared in accordance with the "Global Reporting Initiative (GRI) G4 version guidelines and AA1000 (2008) standards; also, verified by SGS-Taiwan in conformity with the GRI G4 Core Option Standards and AA1000 AS Type I intermediate assurance level.

The CSR Report relevant information and data are composed and provided by the OUCC Taipei Headquarters and Linyuan Plant to ensure it meets the needs 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.

Relevant information

Unless otherwise stated, the New Taiwan Dollar is the currency used in the CSR Report. Some indicators are the consecutive data of 2014-2016 provided to highlight mid-term and long-term trends. If you have any comments on the "Oriental Union Chemical Corporation 2016 Corporate Social Responsibility Report," you are invited to forward your valuable comments and advice.

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ABOUT US

OUCC was founded in 1975 and traded on the Taiwan Stock Exchange in 1987 with a capital stock of NT\$8.85 billion. 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 and has plants in Kaohsiung Linyuan and China Yangzhou. The Linyuan Plant has an annual output of 360,000 tons of ethylene oxide (EO) and 300,000 tons of ethylene glycol (EG). The invested production plant in Yangzhou has an annual output of 400,000 tons of ethylene oxide (EO) and 500,000 tons of ethylene glycol (EG), 40,000 tons of ethanolamine (EA), and 60,000 tons of ethylene oxide derivative specialty chemicals (EOD).

The OUCC has developed a range of short-, mid-, and long-term strategies in response to risk and increasing volatility of the global petrochemical market. In addition to production expansion plans initiated in Taiwan and China, the OUCC is actively seeking to invest in less-expensive raw material supply sources, to deepen our development in this industry and enhance our competitive advantage in the petrochemical industry. The OUCC continues to develop innovative technologies and a range of value-added specialty chemicals and materials. We are exploring new markets and new products, and minimizing the impact of bulk petrochemical material fluctuations on our operations so we may continue to grow in the face of fierce global competition. Currently, the OUCC continues a series of transformation projects to gradually expand the specialty chemicals territory in line with the diversified business operation of the Company.

We value the importance of industrial safety, health, and environmental protection and substantiate management system compliance and efficient on-the-job training. In terms of industrial safety, the OUCC has continued implementation of the "OHSAS-18001 Occupational Safety Management System" and has completed the various safety requirements. There were no major accidents in 2016. The Kaohsiung Linyuan Plant was awarded the Certificate of "Two Millions Accident-Free Working Hours Record" by the Occupational Safety & Health Administration, Ministry of Labor.

We have established a good healthy working environment and were awarded "Health Promotion Label" healthy workplace certification by the Health Promotion Administration of the Ministry of Health & Welfare. In addition to continuing with the "ISO-14001 Environmental Management System," the company has established a pollution prevention system improvement plan to improve the effectiveness of pollution prevention and control, and honorably received the "Environmental Sustainability Award" Certificate awarded by SGS.

The OUCC is becoming a diversified and sustainable company handling both traditional and specialty chemicals, and high-tech chemical materials. We are also constantly fulfilling our goal by creating new value for our customers, shareholders, and employees.



THE CHRONICLES OF THE OUCC

The company was authorized for incorporation with a share capital of NT\$569 million. The shareholders included the Central Investment Co Ltd, the National Development Fund, the Executive Yuan, the Far Eastern Textile Co Ltd, the Union Carbide Corporation, and the China Development Trust Incorporated.

1987 Stock approved for sale.

1978

Ethylene glycol plant construction completed.

1<mark>982</mark>

Union Carbide Corporation withdrew from the OUCC. The Yonglian Gas Company that had been invested in by the Union Carbide Corporation, Central Investment Co Ltd, and CPC Corporation, Taiwan were merged with the OUCC and the capital stock was increased to NT\$1,494 million.

2005

Completed the multi-functional pilot plant that was designed and constructed by the OUCC as a good foundation for future technology and the design and development of new products and processes as well as new product pilot runs.

2008

- 1. Completed ethanolamine plant II with an annual production capacity of 40,000 tons. This increased the total annual ethanolamine production capacity to 80,000 tons.
- 2. Completed the ethylene carbonate plant de-bottleneck project to increase the annual production capacity to 60,000 tons.
- 3. The Investment Commission MOEA approved OUCC (Bermuda) Holding Ltd investment and establishment of the Oriental Petrochemical (Yangzhou) Co Ltd, mainly engaged in the production and sales of ethanolamine, ethylene carbonate, fatty alcohol ethoxylates, polyethylene glycol, and polyethylene glycol monomethyl ether.

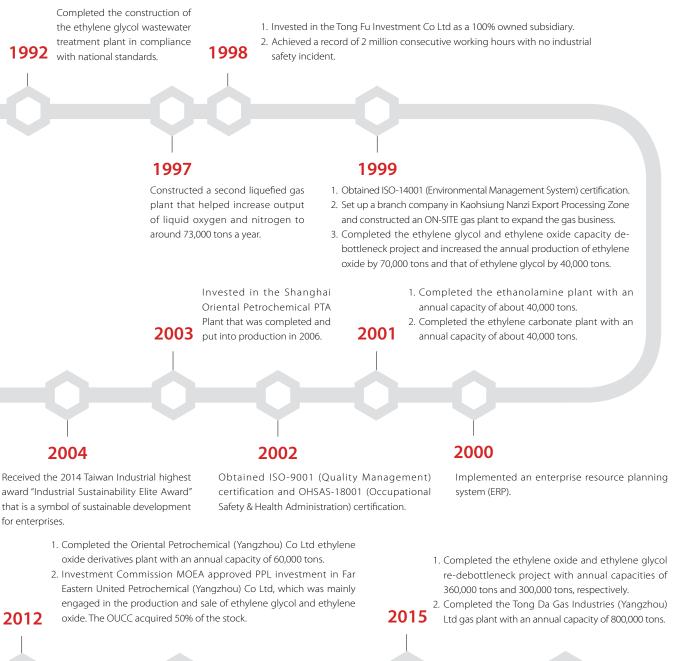
Purchased Pacific Petrochemical Holding Ltd. (PPL) stock shares from Yuan Ding Investment Corp and Core Pacific Capital Ltd. In addition, sold PETH shareholding to Far Eastern New Century Corp. The OUCC holds 100% of PPL shareholding after the transaction was completed and 39% indirect shareholding of Oriental Petrochemical (Shanghai).

2009

2011

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

- 1. Oriental Petrochemical (Yangzhou) Co Ltd constructed and put the 40,000-ton ethanolamine plant into operation.
- 2. Completed the construction of the ethylene oxide derivatives plant in Linyuan with an annual capacity of 40,000 tons.



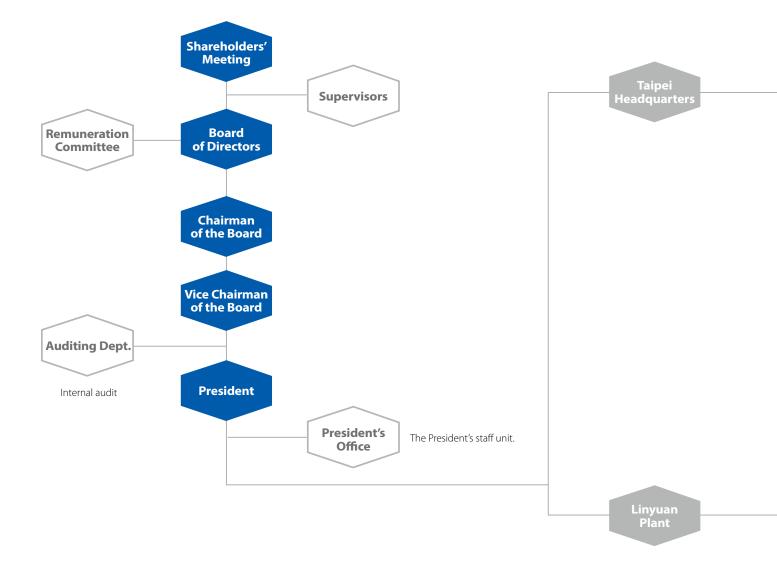
2014

The Investment Commission MOEA approved PPL investment in the Mastery Gas Industrial Company (Yangzhou), mainly engaged in an ethylene low-temperature storage tank project and the construction of an air separation plant project. The company holds 50% shareholding indirectly.

Completed the gas plant with annual output of 340,000 tons at Linyuan site in June; 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.

2016

ORGANIZATIONAL STRUCTURE AND SCALE



- O Head office: 13F, No. 101, Fu-Hsing N Road, Taipei City
- OUCC
- **O** Telephone: (02) 2719-3333
- **O** Factory: No. 3-5, Industrial 3rd Road, Linyuan District, Kaohsiung City
- **O** Telephone: (07) 641-3101
- O Number of employees: 369
- **O** Manufacturing location: Kaohsiung & Yangzhou

SC Business Group	EOD Sales Dept.		
1. Sale of EA and EC. 2. Sale of EOD and other specialty chemicals.	EA & EC Sales Dept.		
 Sale of specialty chemicals abroad and channel establishment. Technical support of specialty chemicals, new application development and new product specification formulation. 	SC Sales Dept. (Overseas)		
	SC Technical Service Dept.		
EOG & GAS Business Group	EOG Sales Dept.		
 Sale of EO and EG products (MEG and DEG , etc.) and procurement of major raw materials. 	GAS Sales Dept.		
2. Sale of gas products (oxygen, nitrogen, argon gas and liquefied CO_2).			
Insurance, shareholders' service, credit investigation and financial management.	Finance Dept.		
HR & Administration Center	Human Resources Dept.		
1. Management of human resources, and general related affairs.	Accounting Dept.		
 2. Taxation, budget and accounting management. 3. IT system management and implementation. 	IT Dept.		
Plant Management Center	Administration & Logistics Dept		
 Plant administration, logistics and transportation related affairs. Procurement of raw materials and supplies, awarding of contracts, and the related. 	Procurement Dept.		
Manufacturing Group	EOG & EA Plants		
1. Production of MEG, DEG ,EO and EA.	GAS & EC Plants		
 Production of Gas (oxygen, nitrogen, argon gas and liquefied CO₂) and EC . Production of the specialty chemical of EOD. 	EOD Plant		
	S.H.E. Dept.		
Environmental protection, labor safety and other safety-related matters.			
Technical & R&D Center	Material Development Dept.		
 Project execution, production process improvement & evaluation, and engineering related matters. 	Processing Development Dept.		

- R&D of EOD materials and new products, etc.
 Record EOD materials and new products, etc.
 Process development and technical support, etc.
 Analysis, testing and quality assurance.
 Maintenance of instruments, machinery and electrics & mechanics.

1	
	Processing Development Dept.
	Quality Assurance & Analysis Dept.
	Methodological Engineering Dept.
	Maintenance Dept.

PRODUCTS

Ethylene glycol(EG) is the main product of the OUCC. The Ethylene Glycol Plant was built in 1978 using US Union Carbide process technology (Dow Chemical merged with Union Carbide in 2011). After the completion of the de-bottleneck project, EG annual production capacity expanded to 300,000 tons. The product is supplied mainly to domestic polyester industry manufacturers with some being exported to China, Southeast Asia, New Zealand, and Australia.

Due to the rapid expansion of polyester production capacity in China, local ethylene glycol production is insufficient to meet the needs of the downstream industry and millions of tons of ethylene glycol are imported annually. The OUCC invested in the Far Eastern Union Petrochemical (Yangzhou) Ltd. in 2012 and began the construction of an ethylene glycol plant with a production capacity of 500,000 tons and an ethylene oxide plant with a production capacity of 400,000 tons that have launched for production in the second half of 2015. The Company owns 50% shareholding of that company. The ethylene oxide produced by the Far Eastern Union Petrochemical (Yangzhou) Ltd. can be used as the raw material for ethylene glycol or supplied to the Oriental Petrochemical (Yangzhou) Corp. as the raw material for specialty chemicals to achieve the synergy of lower raw material cost and vertical integration.

Industry Supply Chain

Ethylene glycol (EG) is the main product of the OUCC. The intended use of EG is for polyester products, including polyester fiber and bottle polyester, film slitting, etc.

Ethanolamine (EA) is supplied to the downstream electrical detergent, resins, inks, textiles, and cement industry. It is also exported to Asia-Pacific, Europe, and America. The domestic ethanolamine plant is able to provide a flexible and rapid delivery service to the local electrical detergent manufacturers.

Ethylene carbonate (EC) is mainly used to produce polyethylene carbonate (PC) for the production of optical discs and other composite plastic materials.

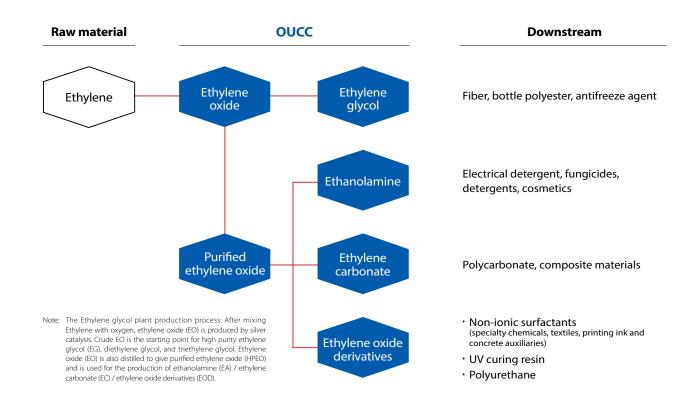
Ethylene oxide derivative (EOD) products are mainly supplied to downstream industries, for use in detergents, electronic chemicals, synthetic resins, textile auxiliaries and cement, and related domestic industries. The domestic industries are closely related with economic growth. In recent years in Asia, particularly China and Southeast Asian emerging markets, the demand for EOD products continues to grow along with the increase of domestic consumption.

Most of the gas produced is used by the internal ethylene glycol (EG), ethanolamine (EA), and ethylene carbonate (EC) plants. Oxygen and nitrogen are also supplied to customers in the Linyuan and Da Far industrial zones. The remaining liquid products are mainly supplied to the domestic electronics, petrochemicals, medical, food, steel, and metal processing markets.











Туре	Item	Product application (end products)
Ethylene glycol	Ethylene glycol (MEG)	Raw material for polyester fiber, antifreeze, desiccants, engineering plastics, PET bottles and brake fluid.
	Diethylene glycol (DEG)	Raw material for Dehumidifying agents, lubricants, leveling agents, solvents, grinding aid, and unsaturated polyols.
(EG)	Triethylene glycol (TEG)	Dehumidifying agents, solvents, and polyols.
	Ethylene oxide (EO)	Raw material for ethylene glycols, glycol ethers, ethyl ethers, nonionic surfactants, and as a disinfectant.
Ethanolamine (EA)	Monoethanolamine (MEA)	Household and industrial cleaning agents, textile auxiliaries, acid gas absorption, pharmaceutical intermediates, electrical detergents, water treatment, resin additives, metal surface treatment, and wood preservation treatment.
	Diethanolamine (DEA)	Shampoo and bathing products, cosmetics, household and industrial cleaners, textile auxiliaries, acid gas absorption, herbicides, PU bridging agent, lubricant or metal surface treatment, resin additives, and fluorescent whitening.
	Triethanolamine (TEA)	Shampoo and bathing products, cosmetics, household and industrial cleaners, textile auxiliaries, cement and ready-mixed concrete additives, lubricants and metal surface treatment, resin additives, PU foam catalyst, and fluorescent whitening.
EVOXs Ethylene oxide derivatives	Fatty alcohol ethoxylates (AEO)	Fatty alcohol ethoxylates (AEO) are non-ionic surfactants that can be used in: - Producing anionic surfactant AES as the raw material for shampoo - As a dispersing and leveling agent in the Textile and dye industry - In metal surface cleaners - For detergent formulations - Wetting agents in the Leather industry - As an antistatic agent for synthetic fiber treatment
	Polyethylene glycol (PEG)	Polyethylene glycol (PEG) is an extremely versatile polyether polymer that can be used: - As a wetting, dispersing and leveling, and emulsifying agent in the Textile industry - As a softener in the Paper industry - In water-soluble ointments and suppository bases - In lubricants and antistatic agents for fiber processing - To increase solubility and lubrication in the resin and dye products



Туре	Item	Product application (end products)		
EVOXs Ethylene oxide derivatives	Polyethylene glycol monomethyl ether (MPEG)	Chemical structure of polyethylene glycol monomethyl ether: CH ₃ -(OCH ₂ CH ₂)n-OH This product and acrylic acid are combined to produce MPEG acrylate that is the main raw material for the production of polycarboxylate, an efficient concrete water reducer.		
	Polyethylene glycol tallow ether amine (TA)	olyethylene glycol tallow amine ethers (TA) are non-ionic in alkaline and neutral medium and cationi acidic media with excellent emulsifying and leveling properties widely used as: Fextile Auxiliaries Pesticide emulsifiers Metal corrosion inhibitors _ubricants		
	Ethoxylated trimethylolpropane (TM)	Ethoxylated trimethylolpropane (TM) is a polyol alkoxy containing three primary alcohol functional groups that is a colorless and transparent liquid at room temperature and is often used in: - PU Crosslinking agents - UV Curable coatings reactive monomer precursors - Aqueous polymer compositions - Synthetic Lubricants - Polyester alkyd resin films - Chemical processes		
Ethylene Carbonate (EC)	Ethylene carbonate (EC)	 Ethylene carbonate (EC) is a widely used basic chemical that is mainly used: In polymer synthesis: non-phosgene polycarbonate; polyurethanes; unsaturated polyester; and engineering plastics In pharmaceutical intermediate synthesis As a solvent: in acid gas absorption; as a lithium battery electrolyte; as an electrical detergent; in cosmetics; in cleaning agents; and as a degreaser 		
	Oxygen	For use in the petrochemical industry, metal processing, industrial welding and cutting, waste water treatment, incinerators, hospitals, and aquaculture.		
Gas Products	Nitrogen	For use in the refining industry, electronics and semiconductor industry, plastics, food refrigeration and packaging, the chemical industry, and metal heat treatment.		
	Argon	For use in welding, the space industry, the electronics and semiconductor industry, metal and alloy manufacturing, etc.		

Research and Innovation

In view of oil price fluctuations, global environmental change, and competition from new ethylene glycol (EG) plants in China and the Middle East, the OUCC is undergoing positive transformation, with sufficient intellectual property and competitiveness cumulating through extensive research and development, to enter the specialty and precision chemical fields.

We have a very highly qualified R&D team and to strengthen our research and development capabilities, a "Research Group" was formed in 2001 to promote the development of product transformation and was restructured into three units including Material Development, Process Development, Quality Control Analysis with six teams in January 2016, and combined the Technology and R&D teams to set up the "Technical and R&D Center" in May, 2016. In addition to the expansion of business applications, new products in several different areas have been developed in line with market changes and future chemical material demand. Current research and development areas include:

- 1. High quality, high value-added EOD / POD products: Low foaming surfactants with synthesizing many types of synthetic polyether, UV curing resin polyether, EO / PO copolymer.
- 2. EOPO polyether polyol specialty raw materials: Produce low unsaturation, high molecular weight, high activity polyether polyols with continuous processes to be used in specialty PU products.
- 3. Propylene oxide (PO) technology: Develop independent catalyst technology to produce PO, provide downward in EOPO polyether polyol reaction, integrate the product chain.
- 4. Polyether alcohol-based amination derivatization reaction: Synthesize various types of polyether amine compounds to be used in epoxy resin and PU industry.

R&D Direction

Product Category	R&D Subject	Contents
EOD/POD	Surfactant	Downstream applications of EO derivatives for the development of fine chemicals, including nonionic surfactants, cement water-reducing agent, various intermediates for further dyeing, 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	Cement water- reducing 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.
	Ultraviolet curing resin	UV and aqueous paint and resin development is a response to the need for global environmental protection and carbon emission reduction.
	PEG Fatty acid esters	Can be compounded with various types of wax emulsifier, lubricants and anti-corrosion additives, and dyeing dispersant to be used in water treatment, leather fatliquor.
PU Raw Materials	EOPO polyether polyol	Produce low unsaturation, high molecular weight, high activity polyether polyols with continuous processes to be used in specialty PU products.

OUCC 2016 EOD products are actively developed into the customized products, new products include: UV curing monomer (PETEO, BPAEO, DMPEO, EO / PO block copolymer), customized OEM EO modified raw materials (A300, AR-58, GL7U), Isomers Alcohol + EO series products (TDE, TDK) and fatty alcohol ethers (S7, L7 series) with high-mole EO used for waterborne emulsifiers, etc., and the quality receives high praise from the downstream customers.

Looking ahead, to successfully become a diversified company that covers traditional chemicals, specialty chemicals and high-tech chemical materials, OUCC continues to build more customized EOD products on the basis of existing customers, to meet customer needs, and actively seek for opportunities in cooperation with internationally renowned companies.

	Unit	2013	2014	2015	2016
R&D amount	Million (NT\$)	134	133	134	135
Total annual revenue	Million (NT\$)	13,729	12,421	13,924	19,531
Ratio	%	1.0	1.07	0.96	0.69

Production Process Development of cumyl-hydroperoxide propylene-oxide (CHPPO)

In order to proceed with the production of polypropylene glycol derivatives for OUCC, the development of selfowned technology for the production of propylene oxide has been underway, aiming to reduce the production cost of polypropylene glycol series and increase the categories of propylene oxide derivatives.

The nowadays pioneering processes of CHPPO and HPPO for the production of PO have been the exclusive ones and the mainstreamin of the field, which produce no co products. Through all levels of comprehensive consideration, OUCC choose CHPPO process as the main technology for the production of propylene oxide. The most important key to this process technology lies in the technical limitation of the catalyst required for the conduction of epoxidized reaction, of which catalyst technology is still kept to the Sumitomo, with no sign of a releasing date so far, which also means the CHPPO process to produce propylene oxide will need to be licensed by Sumitomo.

OUCC has developed four independent catalyst-related technologies currently, and has applied for multi-national patents. The catalyst has excellent catalytic activity (CHP conversion> 99%, PO selectivity> 96%), and compared with the Sumitomo catalyst, its production and regeneration procedures are easier. This catalyst developed by OUCC has excellent catalytic stability. Under the continuous reaction test, the catalytic activity does not have any trend of decreasing after a long period of continuous on-and-off operation tests (>200hr, on-and-off every 6 hours). Based on the present achievement of the R&D, it is predictable this self-developed technology of OUCC will lead to the successful production of PO.

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, 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, execute the project, and has the outsourced manufacturing process technical data distributed to production, technology (processing and engineering teams), maintenance (machinery, electrical engineering and instrument teams), and other relevant units. The contract will include protection clauses for IPR, patents, copyrights and confidentiality to ensure the integrity of technology rights.

The OUCC is committed relentlessly to investment in R&D and innovation, applications for investment tax credits with the approval of the government are filed annually, as an endeavor to the establishment of the new era of green chemistry. In addition, the OUCC also cooperates with other relevant R&D organizations and invests in R&D equipment.

Туре	Grant Plan	Description	Funded by the OUCC
	DEIPA synthesis technology development	Alkylol amine related product development, including DEA and PO	NT\$ 3.9 million
R&D	EOPO polyether polyol specialty raw materials technology development	Produce low unsaturation, high molecular weight, high activity polyether polyols with continuous processes to be used in specialty PU products	NT\$ 82.5 million
Equipment	PO & ETE pilot equipment	PO & ETE pilot equipment Development of the self-owned technology of ethylene production by dehydration of Propylene oxide and ethanol	
	5L stainless steel and 1L glass high-pressure reactors	Strengthening EOD synthesis development to provide more detailed data on the EOD appearance change throughout the reaction process to help improve performance	NT\$ 3.9 million
	Nitrogen adsorption	Utilization of the gas adsorption method (nitrogen or argon) to measure the surface area of powder or block material and the pore distribution	NT\$ 3.8 million
	Distillation equipment	For the purification of ethylene glycol and related tubular reaction products	NT\$ 9 million
	Gel Permeation Ultra Performance Liquid Chromatography	The analysis of trace impurities	NT\$ 3.5 million
Industry-academy cooperation (National Cheng Kung University)	CHPPO catalyst technology development	The development of catalyst synthesis method of National Cheng Kung University will gain OUCC one more proprietary technology	NT\$ 300,000
Industry-academy cooperation (Tunghai University)	Collect PO / TBA reaction parameters	Tunghai University provided a variety of different parameters PO / TBA batch reaction results, so that OUCC can understand the relevant information of those reactions	NT\$ 1.5 million



Industry Sustainable Thinking

The OUCC has been persistent and flexible in business operations. We pursue a diversified product strategy and insist on safety management. Reduction of the discharge of harmful substances and compliance with regulations, standards, and specifications are specific OUCC production goals.

To achieve sustainable development and avoid all disaster-related incidents that cause public concern over chemical safety, the OUCC has adopted a stable, safe and environmentally friendly approach to product development. The effect of the product on health, safety and the environment has been taken into account from the very start of the life cycle, aiming to reduce all possible impact on the environment resulted from the product or production process. Our strategies include:

- All the technology currently adopted in production process by OUCC are fully developed, and the outsourced technology meet the regulation.
- Encourage our employees to think from the viewpoint of environmental protection, reduced production of harmful substances and the achievement of innovative means for environmental safety. All technology developed in the future must meet the requirements of the environmental protection unit.
- Any release of toxic substances into the environment during production will be avoided as much as possible at the product development and design phase and there will be no residue on the product or contamination of the environment.
- Upon customer's request, the newly developed and manufactured products will be tested and verified by a public institute (such as SGS) to ensure they comply with all the relevant environmental regulations or specifications.

NMR Analysis Technology to Reduce the Generation of Waste Solvents

The OUCC has been using nuclear magnetic resonance (NMR) analysis since 2010 to determine EOD related product molecular structure, and in the analysis of impurities in AEO, MPEG, and PEG. This ensures rapid production and quality control as well as purity of the products. But the most important benefit is the reduction of the amount of waste solvent with enormous subsequent environmental benefit.

Traditionally, qualitative analysis of organic compounds is carried out by titration or spectrophotometry of samples after chromatographic (LC/GC) separation. In addition to the sample which might be anything between 0.1g and 30g large volumes of solvent (MeOH, ACN, etc) $30 \sim 50$ ml at a time, are used throughout the analysis.

Although these conventional analytical methods can provide more sensitive detection and better accuracy, the large amount of waste solvents may affect the environment. NMR analysis requires very small samples (10~30mg) and very little solvent and has a minimal effect on the environment.

Environmental Characteristics Product (EC)

Ethylene carbonate is produced by a reaction between ethylene oxide (EO) and main feedstock carbon dioxide (CO_2) , which reduces effectively the CO₂ emission and earns EC production a green process for the reduction of GHG emission. The estimated annual average of CO₂ emission reduced is approximately 45,790 MT/Y.

Environmental Characteristics Product (Bio Ethanol)

Currently most ethanol is produced from food crops such as corn, grain, sorghum, potatoes, and so on. A general shortage of these food crops around the world has resulted in a rise in the production costs of biomass alcohol. The result is that attention has been turned towards the production of ethanol from agricultural cellulose waste such as rice straw and bagasse. Traditionally, such agricultural waste is incinerated or buried, but if a process for the development of cellulosic ethanol can be perfected, this will solve one of our agricultural problems.

Cellulosic alcohol can be dehydrated into ethylene and then used to make biomass MEG. Once it is developed successfully, the raw material for the production of EG can come from crude oil or agricultural waste that will help reduce our dependence on crude oil (currently ethylene comes from the cracking of crude oil). Furthermore, biomass MEG production does not increase CO2 emission and is a green product.

As the oil prices continued to slump and the China's economy growth became slow, the downstream demand of ethylene glycol (EG), the OUCC's main product, turned sluggish. The price of ethylene glycol in Asia dropped by 14% compared to that of 2015, yet the price of raw material ethylene was soaring due to shortage of supply, which compressed the profitability of EG. However, the price rebounded since November due to increase of the downstream demand that slightly reduced the negative impact for 2016. Despite of the market oversupply and fierce competition, the revenue and profitability of gas products had grown steadily. The market situation for Ethanolamine (EA) remained slumped due to over capacity. The Ethoxylates (EOD) business had started improving steadily through partnerships with international chemicals manufacturers, and actively marketing development overseas.

The OUCC's revenues for 2016 amounted to NT\$10,985,765 thousand, a decrease of 7% compared to 2015 and the net loss before tax amounted to NT\$649,603 thousand, final net loss being NT\$562,188 thousand. The proposal to distribute a cash dividend of NT\$0.2 per share from the capital surplus was resolved at the 8th Board meeting of the 14th term.

	Unit	2013	2014	2015	2016
Operating income	NT\$ Thousand	13,729,130	12,420,607	11,762,073	10,985,765
Operating cost	NT\$ Thousand	11,314,683	11,113,170	10,276,950	10,245,666
Operating expense	NT\$ Thousand	565,176	589,215	593,562	564,036
Net operating profit	NT\$ Thousand	1,849,271	718,222	891,561	176,063
Non-operating income and (expense)	NT\$ Thousand	(310,504)	(622,280)	(1,053,321)	(825,666)
Net income before tax	NT\$ Thousand	1,538,767	95,942	(161,760)	(649,603)
Income tax expense (profit)	NT\$ Thousand	273,471	(20,583)	(41,808)	(87,415)
Net income	NT\$ Thousand	1,265,296	116,525	(119,952)	(562,188)
Retained earnings (note)	NT\$ Thousand	5,448,946	4,662,108	4,499,473	3,888,027
Staff salaries and benefits (including wages, same as financial statements)	NT\$ Thousand	463,971	446,708	449,867	482,274
Tax paid to government	NT\$ Thousand	314,503	33,161	(16,018)	125,664
Dividend paid to shareholders (annual earnings)	NT\$ Thousand	1,062,844	885,703	442,852	177,141
Community Investment / Donation expense	NT\$ Thousand	1,661	3,821	1,423	2,499

Note: The net balance of the dividend paid to the shareholders in the following year.

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. We also post all the information and communications in connection with investment seminars, shareholders' meeting, and investor relations and other company matters on the website. The OUCC has diversified communication channels:

- 1. The suggestions or questions raised by the shareholders, in addition to being dealt with by the President's Office, can also receive attention from the spokesman and deputy spokesman of the company, or from the "Oriental Securities Corporation" that provides stock services to the OUCC.
- 2. All the relevant information is on the MOPS and http://www.oucc.com.tw (the Company website) in accordance with government provisions and regulations.
- 3. In addition to the information available from the spokesman and deputy in accordance with the provisions, investors meetings are held from time to time and the results are disclosed in accordance with the provisions.

SUSTAINABLE COMMITMENT

Oriental Union Chemical Corporation

Tsai, Hsi-Chin General Manager

Thank you for reading the Corporate Social Responsibility (CSR) Report issued by Oriental Union Chemical Corporation. OUCC regards quality and safety, customer satisfaction, work safety and environmental protection as key industry issues, in order to keep our stakeholders well aware of our efforts, in the 2016 CSR report, we continue to base on five major sustainability issues of "quality and safety, transportation safety, environmental protection safety and health, emergency response mechanisms, and energy & climate change" as the theme to explain how OUCC manage and response to the above sustainability issues.

OUCC has been actively transforming in recent years, and has gradually become a diversified enterprise to encompass commodity chemicals, specialty chemicals, advanced chemical technology, and continued to expand the Company's production capacity and investment in the development of high value-added products in 2016. Besides the completed installation of the second air separation unit with annual output of 340,000 tons and 40,000 tons of carbon dioxide (CO2) plant in Linyuan, OUCC also expanded EOD specialty chemical plant to double the production capacity. In addition, the reinvested Far Eastern Union Petrochemical (Yangzhou) Ltd., completed more than two years of construction of ethylene oxide (EO) plant with annual production capacity of 400,000 tons and ethylene glycol (EG) plant with 500,000 tons, officially started commercial operation in June 2016. The total annual production capacity of ethylene oxide (EO) in Taiwan and China has reached 760,000 tons, which shall increase the momentum for future revenue growth.

OUCC continues to be committed to improve the process design, research and develop the energy and raw materials recycling facilities to minimize the impact on the environment, and conducts in-depth study and analysis on the raw materials acquisition, process efficiency and waste reduction to implement the balance development of industrial production and environmental protection. The above objectives can only be achieved with the efforts of all our employees and the supply chain partners, therefore, OUCC will continue to improve the health and safety equipment of the workplace, and will take the voluntary commitment of Responsible Care[®] for the chemical industry, continue to improve all management systems, to ensure the safety and health of all employees and supply chain with "Doing the Right Thing, with the Right Way".

In 2017, Linyuan plant will invest in the EG plant re-debottlenecking project, from 300,000 tons annual capacity expanded

to 350,000 tons, to further reduce the unit production cost; and continue to promote the green environmental protection production process, use the carbon dioxide generated in the recycling process to develop the diversified products in industrial, food, electronic grades, which will not only increase profits, but also save energy and reduce the carbon footprint, the emission of greenhouse gas; in addition, we will further process the feedstock EO, the core of raw materials, adding high value to the EO derivatives to be used in high-grade polyurethane (PU), optical coatings, electronic process additives and new surfactants.

> With the active development of downstream derivatives products, the high-end environmentally friendly green materials, and the strengthening in the research and development of technological development capabilities, OUCC is transforming into a diversified chemical materials manufacturing company with specialty chemicals as the main focus products, to achieve the business vision of sustainable development.



SUSTAINABLE DEVELOPMENT

Enterprises shoulder the expectations and concerns of stakeholders throughout the journey towards sustainable development, which include securing the confidence of shareholders in a company that has a reasonable return on their investment. It is also essential for OUCC to create a healthy, safe, and self-challenging work environment so that employees will have job stability and enable the vendors to become our partners in the creation of social value.

Our first CSR report was released in 2015, from which we expect the stakeholders that we value, and who may concern about us, to be able to understand and appreciate the efforts we have made in moving towards sustainable development.

Despite the huge challenges and a new beginning, we are determined to demonstrate our firm commitment to creating long-term value for our shareholders, employees, and the community. This is a commitment of our contribution to the industry as well as to our business policy.

"Integrity governance, stability and reliability, and corporate responsibility" are the supporting foundation of the OUCC towards sustainable development. We have implemented such idea into our daily operations and communications with all the stakeholders in a truthful, transparent, and timely manner through the annual corporate social responsibility report.





INTEGRITY GOVERNANCE

There are nine directors on the board (all of them are male), including two independent directors. The directors exercise their authority and duties in accordance with Company Law, the Articles of Incorporation, the Rules of Procedure for Directors Meetings, and the relevant laws and regulations. The directors, supervisors, and management personnel all take part in regular corporate governance education and training. (Please refer to page 30-31 of the 2016 Annual Report for detailed information about advanced study)

A Remuneration Committee has been established to determine and review the performance and remuneration of the directors, supervisors, and management on a regular basis. The remuneration of directors and supervisors as well as bonuses for employees are set in accordance with the annual operating performance of the Company and the percentage of distribution as set down in Article 34 of the Incorporation. 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 Loan of Funds," "Procedures for Endorsement and Guarantee by Public Company," and other relevant provisions. A risk control mechanism and a computer firewall have been properly set up.

Age Distribution of the Board of Directors (2016)







Anti-corruption Mechanism

To establish good corporate governance, an efficient risk control mechanism, and a corporate management culture with integrity, the Oriental Union Chemical Corporation has formulated management policies that are based on good faith to create a business environment for sustainable development.

The company is committed to the stipulation, supervision, and implementation of best practice in all management policies and precautionary programs. The Audit Department carries out regular audits and reports their findings to the Board. We take advantage of the regular internal management meetings for all employees to advocate further education and training.

The directors, supervisors, managers, and all employees of OUCC are bound to comply with all the requirements of the "Codes of Conduct" and "Best Practice Principle" as published and posted on the company website. These 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. Any violation of these codes will result in the offender being punishable under the Law and liable for compensation for damages incurred. In addition, it is clearly stated in the Rules of Procedure for Board of Directors Meetings that all directors are bound to circumvent the interest. The Board of Directors are also bound to fulfill their obligations in good faith and to ensure the implementation of the business best-practice principle. There was no corruption incident occurred in 2016.

Provisions have been made to protect the identity of whistle-blowers or informers and for the full confidentiality of all such events. Any violations of ethical management must be reported to a company supervisor, the internal auditor, or other appropriate authority. A "Complaints Email Box" has been set up on the company website supervisor@oucc.com.tw

In addition to provide a report channel for the stakeholders, the email box can also be used to conduct "Codes of Conduct" and "Best Practice Principle" and other moral integrity ethics and responsibility advices, and will be dealt with by designated personnel.

A Sound Internal Control System

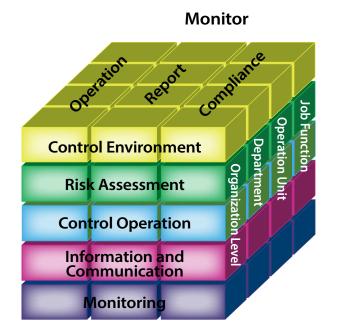
Approved by the Board of Directors, the internal control system of the OUCC is to be implemented by the Board, the management, and other employees and is designed to provide sound management and secure the three main objectives of the internal control system:

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

In addition, the effectiveness of internal control, other than the achievement of three main objectives, depends also on its associated five elements, namely the control environment, risk assessment, control activities, information and communication, and monitoring.

The OUCC has an independent Audit Department that is directly responsible to the Board of Directors. The chief auditor, in addition to regular audit reports to the supervisors, attends Board meetings to present audits and discuss auditing matters. Audits are carried out to assist the board of directors and management to check and review the internal control system, uncover any nonconformities, and also to measure the effectiveness and efficiency of operations. Regular reviews and recommendations for improvements are made in a timely manner to ensure the effective implementation of the internal control system.

In addition to the internal audits, all departments carry out regular as well as random self-audits of operations management from time to time. The internal auditor then reviews the results of the autonomous audits of the different departments to ensure the effectiveness of the internal control system.



Internal Audit

The internal audit department of OUCC conducts mainly the inspection and review of the internal control system, performance of the annual audit plans according to risk assessment, the implementation of audits and preparation of audit reports and follow-up reports, audit reports to the Board of Directors, the review of the self-assessment reports from each business unit, as well as cooperation in occasional or special project audits.

Draft the annual audit plan according to the risk assessment for approval of the Board of Directors Perform the audit according to the annual audit plan Submit the audit report to the management, supervisors, and independent directors Implement a followup audit nonconformity report on a quarterly basis Present to the Board of Directors the implementation of the audit operation

OUCC places great value on corporate social responsibility, on internal control, and on internal audit related issues. To ensure that the business operation and information disclosure meets the expectation of the stakeholders, we included details of inspection of product safety, environmental safety, labor safety, investors, and research and development operations in the 2016 audit plan.



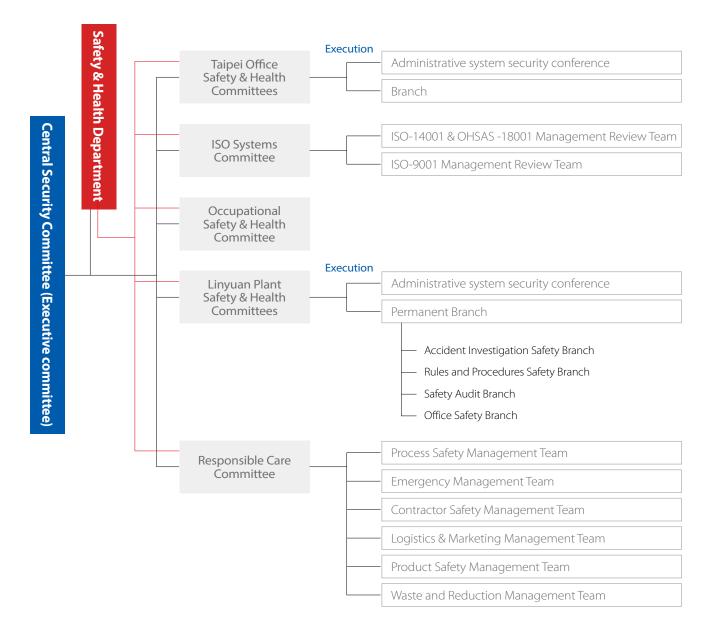
In addition to scheduled auditing, the audit department submits the following internal audit reports to the competent authorities regularly every year as follows:

- 1. The next annual audit plan before the end of each fiscal year.
- 2. The internal audit staff list before the end of January every year.
- 3. The implementation of the last annual audit plan within two months after the end of the current fiscal year.
- 4. The internal control system statement within three months after the end of the current fiscal year.
- 5. Details of all nonconformity and corrective action taken for the last annual internal control system within five months after the end of the current fiscal year.

STABILITY AND RELIABILITY

Risk management is a vital component of sound operation of the OUCC. 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.

Risk Management Organization Chart



Enterprise Operational Risk

Ensuring stable operation and planning comprehensive risk response measures are the main OUCC approach to business operation risk. In addition to overall management planning for risk and setting up the general responsive strategies and procedures, individual units will also make their own appropriate plans for encounter of operation-related risk. Such precautionary planning will ensure the impact of an untoward event on company operation will be minimized through regular testing and drills.

1. Asset risk response measures: Asset risk can be shifted and reduced by the acquisition of insurance.

a. Property risk assessment

External professional loss-prevention insurance company personnel are invited to make annual visits to the plant to work with the plant 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.

b. 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 and insurance terms and conditions the company can buy a blanket insurance policy for all property at replacement cost. This includes business operation interruption insurance and comprehensive engineering insurance.

2. Accounts receivable risk responsive measures:

In order to control an appropriate amount of working capital and minimize the occurrence of property damage, the OUCC has established a Credit Committee chaired by the President. Members are elected from Administration, Sales, Finance and the Auditing departments. 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.

3. Interest rate risk response:

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. We will continue to observe the changes in interest rates and engage in short-term and long-term financial planning to reduce overall capital cost.

4. Exchange rate risk response

We have initiated natural hedging in accordance with the assets and liabilities in foreign currency arising from our import and export business, and those of our merged companies, to control OUCC foreign exchange valuation profit and loss at a reasonable level.



Climate Change Risk Management

To ease the danger from natural disasters caused by the extreme weather resulting from climate change, or other causes (force majeure) in the plant area, the OUCC has planned various insurance programs to reduce loss to natural disasters. In addition to an alleviation of risk by the acquisition of insurance, OUCC invested NT\$460 million in the construction of a new CO_2 plant and ethylene recovery system in 2015 to reduce greenhouse gas emission, which will significantly reduce the effect our operations have on the environment.

1. Earthquake Insurance:

Earthquake insurance has been added to the property insurance policy with claims limited to 23% of the total insured amount. According to a seismic risk hazard assessment report prepared by the Fubon Property and Casualty Insurance Company, this insurance is sufficient to cover an earthquake with a regression of more than 2,500 years and will minimize losses to the OUCC from earthquake damage. In addition, OUCC seriously implement equipment maintenance management system to ensure shock-proof design can play the effect of the original planning.

2. Typhoon Flood Insurance:

The insurance coverage for typhoon floods is limited to 1/3~1/2 of earthquake coverage and an insurance claim is limited to 10% of the total insured amount. According to Fubon Property and Casualty Insurance evaluation based on Taiwan University model, the flood height reappeared of Linyuan Plant in 100 years would be less than 50 cm. Thus, based on our estimation, in the event of a typhoon flood there should generally be no significant loss if the machines are turned off normally. The important equipment inside the plant was been raised after the "August 8th flood incident" to ease loss and damage from flooding.



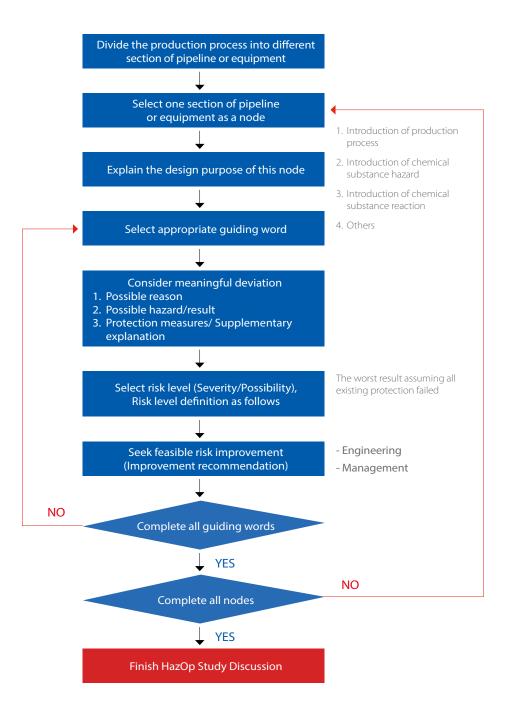
Manufacturing Process Hazard Risk Management

The OUCC regards "hazard control" as the most critical of all safety management measures. We believe that only the most stringent hazard control can actually reduce the risk of workplace accidents, possible personnel casualties, occupational injury and significant property loss. The OUCC has carried out manufacturing process hazard and operability (HazOp) analysis on the more hazardous processes associated with higher risk. A hazard prevention model has been constructed as well as a risk management process that reduce the probability of industrial accidents.

HazOp is a well-known analytical technique frequently used by labor inspection units. The OUCC has executed HazOp analysis for all new installations as well as for the existing ones and an assessment is carried out at least once every five years. The personnel with manufacturing process safety assessment certificates or licenses complete a further training course every three years.

Moreover, 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 degree of risk management. A LOPA analysis of the existing processes (EG/EA/EC) was also completed.

Flowchart of HazOp Method



1. Production Process Safety Assessment

OUCC first conducts a preliminary hazard analysis on the new propylene oxide storage area, to explore major potential hazard in the workplace, if the risk is too high, then further conduct the process safety assessment. In the course of the analysis, if the original protection is insufficient, a feasible improvement recommendation shall be proposed. If the improvement recommendation belongs to the safety management system, then the correction shall be proceeded immediately or a deadline shall be set.

Risk assessment methods: The factory's preliminary hazard analysis uses the following three analyses; one is to conduct essential hazards analysis on the manufacturing, disposal, use of dangerous products, flammability, stability, toxicity of hazardous substances. The other is to inspect the substances, processes, production process units, etc. to understand its harmfulness and measures. The last one is to conduct system function hazards identification and analysis on the operating conditions of the production process system such as temperature, pressure, flow and external environment.

2. Production process disaster prevention measures

a. Propylene oxide tank system abnormalities and operational procedures

Production Process Isolation

- Emergent activation of the ESD system
- Shut off isolation valve

Safety Configuration

- · Combustible gas detectors are installed on site
- · Personnel are distributed with canister gas mask and goggles
- Equipment and pipeline are equipped with emergency sprinkler system (with fire hydrant and water cannon for firefighting)
- Equipped with DCS production process with chain logic system
- Emergency stop press button is equipped both on-site and in the control room
- · Personnel are equipped with class-A protective outfit when implementing the relevant isolation operations upon a leak

b. Emergency response of propylene oxide unloading truck leaking

Production Process Isolation

- Propylene oxide tank outlet pipeline is equipped with flow control valve, to have the shut-off activated when over flowed. 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 foam, sprinkler system as a fire protection.
- Safety Configuration
- Combustible gas detectors are installed on site
- · Personnel are distributed with canister gas mask and goggles
- Storage tanks and unloading stations are equipped with emergency foam, sprinkler system (with fire hydrant and water cannon for firefighting)
- Emergency stop press button is equipped both on-site and in the control room
- · Personnel are equipped with class-A protective outfit when implementing the relevant isolation operations upon a leak



Emergency response of propylene oxide unloading truck leaking





Field Pipeline Maintenance Operation and Management

As a response to the collaborative call, OUCC joined the Kaohsiung Industrial Pipeline Area Joint Protection Association organization formed by the Industrial Development Bureau and Kaohsiung City government in 2015, which comprises eight large pipeline bundle groups. Being a part of the Pipeline Bundle 5 Area Joint Protection Organization led by Chang Chun Group, OUCC worked with the Pipeline Bundle Area Joint Protection organization to perform field pipeline maintenance, emergency response handling and drill practice, and formed the "Pipeline Maintenance Operation Team" in May, 2016, to actively manage the pipeline-related business, including the control of the patrol inspection, testing and maintenance status of the field underground pipelines, expecting to reduce the risk of field pipelines operation.

Underground Pipeline Maintenance Operation:

- a. Pipeline diagram information system maintenance: pipeline piping diagram, basic data collection and maintenance, the establishment of coordinate data and system applications.
- b. 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 Chang Chun Group of the Pipeline Bundle 5 Area Joint Protection Organization.

Our field pipeline maintenance task is to reduce the risk of field pipeline hazard through pipeline diagram information establishment and management, pipeline operation status control, pipeline survey, contingency drill, and maintenance & operation of the joint protection organization.





The OUCC has built a remote backup service to control the information security risk. In the Linyuan Plant, the IT hub and backup system are located in different buildings and several safety measures have been adopted for control and security:

1. Built up the Cloud Data Center at the Kaohsiung Linyuan Plant

The data center contains ERP, applied system, and other important systems and databases and the following efficacy have been proved after some years of application and validation:

a. Self-erected cloud database:

The database has allowed safer internal data access and reduced the vulnerability of a leased cloud environment to a hacking attack.

b. Cloud storage space:

With high flexibility, cloud storage space can be divided and assigned to different types of applied servers by which means the problem of waste of storage space of the old-type has been solved.

2. Two 8MB MPLS VPN Data Lines Set up between Taipei Office and Linyuan Plant

Their main use is for video conference and data transmission. In addition to lower cost when compared to a pointto-point line, the use of ISP transmission encryption and decryption technology makes data transmission much safer. The two lines are incorporated using an ISP full backup facility to achieve an uninterruptible connection. In addition, the line has dynamic bandwidth control (QOS) that provides a bandwidth of 4M that guarantees the quality of video transmission. Data transmission can be up to 16M.

CORPORATE RESPONSIBILITY

CSR management was initiated in 2014 and at the same time a CSR Committee was established. The President was appointed as the Commissioner responsible for final decision making, action plan review, and approval of the final reports.

The head of each department, Assistant Vice-President or Senior Manager, is 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 might need an immediate response. All the management processes, results of assessments and general CSR information is communicated to stakeholders through the company CSR website.



CSR Committee Organizational Structure

The CSR discussions at the OUCC are initiated by the CSR committee. The considerations and issues in the CSR report are determined in accordance with the management of each department, correspondence with the stakeholders, and the needs proposed by them. Also, to ensure an objective and representative judgement, a CSR Committee meeting is held to discuss and confirm the issues according to the first judgement delivered. These steps ensure that all the issues related to sustainable development will be properly disclosed in the CSR Report.

We use the six principles of the AA 1000 SES "Stakeholder Engagement Standard (SES)" (V.2011) to identify the OUCC stakeholders in accordance with responsibility, influence, familiarity, dependency, status, and policy implications and they include employees, suppliers, corporate customers, shareholders and investors, the government, and the competent authorities. Regarding the opinions and recommendations submitted by the above stakeholders, we have discussed in full and disclosed the key points and improvement results in the report.

Diversified Stakeholder Communication

We value the suggestions of our stakeholders which provide strength for progress and help us meet the needs of our corporate customers for product safety and quality. We provide a number of communication channels for employees, investors, suppliers, and the community to easily voice their opinion and receive the response.

The OUCC believes that sustainable action can only be included in corporate business management through an understanding of the needs of stakeholders and by transparent disclosure of the issues of concern in a way that fulfills CSR commitments.

OUCC Stakeholder	Communication Channels
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Sta	keholders	The main communication channel and frequency	Concerned issues
G	lnvestor (shareholder)	 One shareholders meeting and one investor conference were convened in 2016 Spokesman hot line and mailbox The company website discloses financial services and corporate governance information The CSR website and report (annual) MOPS Participation in the legal person's forum (occasional) 	 Corporate governance Industrial competition Business development and performance Risk management Dividend policy
L	Employees	 Employee Welfare Committee (occational) Labor-employer meetings (quarterly) Occupational Health & Safety Committee (quarterly) 	 Occupational health and safety Labor salary and benefit Forced and coercive labour Human rights and appeal mechanism
Constant of the second	Corporate customers	 Customer satisfaction survey (annual) E-mail and distribution meeting (occasional) Customer visits (occasional) The company website (occasional) The CSR website and report (annual) 	 The impact of products and services on the environment Greenhouse gas emissions Customer privacy Occupational health and safety Environmental regulations compliance
P	Supplier / contractor	 Supplier periodical evaluation (annual) The CSR website and report (annual) 	 Raw material Energy management Water resources management
၀ဝို၀	Local community	 Charity donations (occasional) Event sponsorship (occasional) Telephone contact (occasional) The CSR website and report (annual) 	 Wastewater discharge and waste Air pollution emission Environmental regulations compliance Impact of transportation on the environment
Î	Government agency / Non-government agency	 Periodic reports at the request of government agencies (occasional) Periodic regulatory audit (occasional) Academic research cooperation (occasional) Social participation: related Union / Association (occasional) The CSR website and report (annual) 	 Product and service compliance Compliance with local regulations

Material Issues of the OUCC in 2016



Note: Indicators of major consideration disclosed in the CSR Report.

Economy		Environment				
 Economic Performance Market Image 	4 Water Resource Man	 Energy Consumption Water Resource Management Air Pollution Emission Effluents and Waste 		 Product & Service Environmental Impact Environmental Regulations Compliance Impact of Transportation on the Environmer Overall Environmental Expenditure Environmental Grievance Mechanisms 		
Labor	Human rights	Community	y	Product responsibility		
 2 Labor Employment 8 Labor Relations 9 Occupational Health and Safety 	 Forced or Compulsory Labor Labor Practices Grievance Mechanisms 	Organization Operat Compliance	ion	(B) Customer Health & Safety(D) Product & Service Labeling		

The 2016 major consideration and organization boundary

Note: The OUCC is the main entity within the organization and those outside the organization include local communities, suppliers, storage and transportation companies, and corporate customers.

Indicates importance or point of impact

Economy category		Boundary				
Scope	The OUCC	Local community	Supplier	Storage & transportation company	Corporate customer	
Economic Performance	•	continuinty	•	•		
Market Image	٠					
			Davina			
Environment category	71 01100	Local	Bound	Storage & transportation	Corporate	
Scope	The OUCC	community	Supplier	company	customer	
Energy Consumption		-	•		•	
Water Resource Management			•			
Air Pollution Emission			•		•	
Effluents and Waste	•	•	•	•	•	
Product & Service Environmental Impact	•				•	
Environmental Regulations Compliance	•	•	•	•	•	
Impact of Transportation on the Environment	•	•		•		
Overall Environmental Expenditure	•	•				
Environmental Grievance Mechanisms	•	•				
Labor category		Boundary				
Scope	The OUCC	Local community	Supplier	Storage & transportation company	Corporate custome	
Labor Employment	•					
Labor Relations	•					
Occupational Health & Safety	٠		٠	۲	٠	
Human rights category			Bound	lan		
Scope	The OUCC	Local	Supplier	Storage & transportation	Corporate	
	Ine Obee	community	Supplier	company	custome	
Forced or Compulsory Labor			•		•	
Labor Practices Grievance Mechanisms	•					
Community category			Bound	lary		
Scope	The OUCC	Local community	Supplier	Storage & transportation company	Corporat custome	
Organization Operation Compliance	٠			٠		
Product responsibility		1	Bound	larv		
	The OUCC	Local	Supplier	Storage & transportation	Corporat	
Scone		community	Sabhijei	č company	custome	
Scope Customer Health & Safety		community				



SUSTAINABLE CHALLENGE

The OUCC fully understands the challenges faced by the chemical industry for the attainment of sustainable development, especially after the Kaohsiung gas explosion incident in 2014 that has had an indelible effect on stakeholder perception of the petrochemical industry. According to statistics of 2017 Annual Report of Petrochemical Industry Association of Taiwan, the 2016 product value of petrochemical related industries in Taiwan, amounting NT\$3.166 trillion, accounts for 25.7% of the total product value of the manufacturing. It is also one of the most important sources of raw materials essential for consumer goods.

Therefore, the OUCC takes practical action in response to the risks and challenges faced by chemical industry as well as to changes in the external environment. We are committed to communicating and working with stakeholders to build and promote sustainable development for both society and industry.

The OUCC has established policies and standards to cope with the key issues of sustainable development faced by the chemical industry, these include: quality and safety, chemicals delivery, environmental health and safety, emergency response, and climate change. This has been done through staff education and training, with regular drills, that minimize the risks and uncertainties of each issue.

The OUCC understands that the way to sustainable development is long and tough and needs real persistence. The CSR Report will include exact details of every risk that requires strict management in addition to normal internal control.



The OUCC has developed and implemented an effective quality management system that undergoes regular improvement. Raw material and product quality both have been upgraded in compliance with local and international standards, in order to maintain the trust of our customers.

Furthermore, highly efficient catalysts are used to enhance the effectiveness of factory production and raw material utilization. The CO₂ emitted in the production of ethylene oxide in the ethylene glycol plant is used as raw material in the ethylene carbonate plant. This reduces greenhouse gas emission and minimizes the effect on the environment.



The "quality and safety" issue has been a challenge to the OUCC because our product manufacturing processes involve hazardous and environmental factors. The production technology requirements and specifications, the laws and regulations in force, as well as customer requests present major challenges to both quality and safety. We continue to improve product quality and process safety using all the available strategies and means at our disposal.



The OUCC received an SGS ISO-9001 certificate on July 29, 2002. Customers receive products that meet all regulatory requirements according to international standards through a thoroughly systematic operation. There has been no major failure of quality so far and the certification is valid. In response to EU RoHS directives, all material, formulations, and manufacturing processes have been tested individually to confirm the claim that they are all lead and cadmium free.



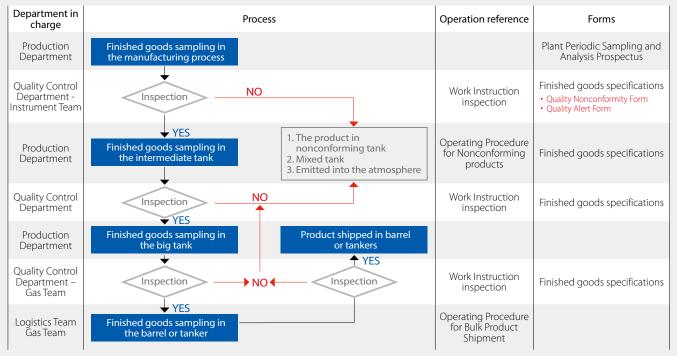


The OUCC implemented the ISO-9001 quality management system in 2002 and adheres strictly to all its requirements. The entire quality management system follows the corporate spirit of the Far Eastern Group's "future challenge, dedication and innovation, perspective operation." The company is absolutely committed to the expansion of sustainable development and the quality and specifications of all the products fully meet international standards and the needs of the customers.

We have deliberately set the product realization process, including raw materials management, incoming feedstock inspection, process and production control, product protection, process chain management, product identification and traceability, periodic sampling, field monitoring recording and storage, and statistical technique to ensure that product quality remains in line with customer demand and all the laws and regulations.

A customer satisfaction survey is carried out every year to validate product conformity, to ensure compliance of the quality management system, and to improve its effectiveness. All customer complaints, information or suggestions are taken into account when the performance of the quality management system is measured. An internal audit is carried out every six months and an annual external SGS audit is conducted to ensure effective implementation and maintenance of the quality management system. Corrective action is taken for any nonconformity found during an audit and the root cause is also corrected or eliminated.

All company products are inspected in accordance with the Operating Procedures for Finished Goods Inspection and only those products in complete conformity with the specifications and regulations may be released by the responsible personnel.



Note: "Emissions 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.

Low Residual Toxic Substances (Ethylene oxide & 1,4-Dioxane)

A critical quality control point has been set for each stage of the manufacturing process to reduce the presence of toxic substances in products, for example, the ethylene oxide residue in EOD product is controlled during manufacture and will be less than 1ppm in the final product and 1,4-Dioxane will be less than 5ppm.

As for product safety, lauryl alcohol polyvinyl ether for example is certified by SGS-Taiwan, and can be used safely by the consumer without causing skin sensitivity. The Safety Data Sheets (SDS) of every OUCC product is available to the public on the company website and this includes complete chemical property and toxicity data.

Reducing Harm of Product and Residual Materials

The OUCC fatty alcohol ethoxylates are primarily used as nonionic surfactants and main active ingredient of liquid hand soap, laundry detergents, shower gels, laundry powders, general detergents, and metal cleaning agents. The product specifications are strictly controlled and ethylene oxide residue (affecting human health) \leq 1ppm, and 1,4-dioxane (side effects) content \leq 5ppm.

The liquid CO₂ from OUCC only affects health due to impurities in the form of hydrocarbons. The CO2 factory specification is Methane \leq 20ppm, total hydrocarbons \leq 50ppm, and purity \geq 99.95%. Medical oxygen release criteria are based on the US Pharmacopeia (USP) specifications: Carbon monoxide \leq 10ppm, carbon dioxide \leq 300ppm, and purity \geq 99.0%, odorless and tasteless.

Medical Oxygen GMP

The OUCC medical oxygen (as liquid) received the Executive Yuan Department of Health Pharmaceutical Good Manufacturing Certificate in February 2013. OUCC medical oxygen with the US Pharmacopeia (USP 35) manufacturing specifications is fully compliant with the pharmaceutical manufacturing plant standard Chapter 3 Good Manufacturing Practice and GMP standards of the Pharmaceutical Inspection Convention and Pharmaceutical Inspection Cooperation Scheme (PIC/S).





Chemical Transportation Safety

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. As densely populated as Taiwan and with no roads especially designated for chemicals transport, most chemicals are transported on public roads resulting in close interaction with the public. Therefore, road accidents involving vehicles transporting chemicals may often present an immediate threat to the lives and property of people in proximity and also cause substantial loss to an enterprise and the society.



All OUCC products are transported by the tankers outsourced from external suppliers; therefore, the transport contract management is more important. The main risk of chemical transport is from traffic accident that caused the tanker to be overturned, resulting in the effusion of chemicals, and the chemical hazard categories, include: explosive, corrosive, flammable, oxidizing and toxic, 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, the social costs resulted in is huge. The direct cause triggering the hazardous substance leakage can be divided into four factors: man-made, vehicle, storage equipment, road and environment.



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Risk factors

Human error

Vehicle failure

Storage facilities

Road and

environment

To ensure the safety of tanker transport, OUCC sets strict standards on outsourcing the transport contracts. When the tanker is traveling on the road, it must comply with the regulations specified in the laws and regulations stipulated by the government, and analyze the various factors possible cause hazardous accident and the various hazards caused by the overturn of the tanker, clearly review and improve the management system needed for transport safety, and demand every transport company to include the above risk factors into the emergency response process mechanism.

Possible incidents

2. The tanker driver fails to fully comply with traffic rules, for example: speeding, drunk driving, running

3. Other road users fail to follow traffic rules and collide with the chemical tanker, or cause the tanker

2. Transport tank not correctly coupled with the vehicle or the coupling device has been damaged.

1. The tank has been used for too long and may be corroded or be defective in other ways.

1. Poor geometric road design: too sharp curves, steep hills, obstructed view of the road, etc.

1. The inlet valve is not closed properly after a tank has been filled.

1. Vehicle mechanical failure: brakes, steering tire blowouts or punctures.

red lights, keeping no safe driving distance, etc.

2. The chemical load is incompatible with the tank material.

The internal pressure is too high for tolerance of the tank.
 Leaking valves or leaks from pipeline accessories or other parts.

2. Unclear and insufficient traffic direction and warning signs.

driver to veer and lose control.

3. Poor road conditions and obstructions.

Through strengthening the hardware inspection, strengthening the personnel operational proficiency, strengthening the response capability of emergencies, is the OUCC's main response mechanism on chemical transportation. Ensure the safety mechanism of outsourcing transportation companies through strict regulation and check, use case-collected information, to improve the supplier's transportation personnel's depth of crisis response through promotion of regular education and training to the drivers and dispatchers.



The outsourced gas tankers are all tested by a national certification institution. At present, there are seven outsourcing tanker contractors, all seven of them passed ISO 9001 certification with 100% pass rate. Three of the seven current tanker forwarders used by OUCC

have ISO 14001 certification, a 42.9% pass rate, accounting for 79.3% of freight delivery. Five of these have OHSAS 18001 certification, an 71.4% pass rate, accounting for 98.9% of freight delivery.

In addition, in order to strengthen the transportation safety mechanism, OUCC uses contract to regulate the transportation contractor's access factory operations, transportation process and inspection system. Within the scope of labor inspection, include road safety in the scope of inspection, and through strengthening the publicity and training the emergency response mechanism to ensure the quality and safety of product transportation.





Regular Transportation Meeting

To ensure the effective management of transportation safety and to discuss safety issues with transportation providers, OUCC held meetings with different transportation providers in 2016, including two meetings with tanker transportation companies, one meeting with gas tanker transportation companies and one with container and truck transportation companies. The subjects included: transportation distribution issues, follow-up on nonconformity reviews, transportation mode coordination, controversial issues, policies and safety information propagation and response to vendor issues.

	Process	Requirements description
		1. Contract: Supplier conduct is regulated by elaborate clauses in the transport contracts.
		2. 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.
	Specification	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) event data recorders as well as GPS so the tanker can be located from any 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.
↓↓	Plant access	Each transport vehicle entering and leaving the factory will be required to have a visual checkup. Drivers are requested to do voluntary inspections and OUCC staff review accordingly. The loaded vehicles must be checked the same way.
	In transit	Each transport route must be confirmed by the motor vehicle supervision office. The driver must drive on the scheduled route set down in the temporary road permit and the journey will be confirmed by GPS recording.
	Emergency response mechanism	Each transport company is required to provide an emergency response prospectus. A transport company of each type of transport service is arranged for emergency drill, and invites the fire brigade or joint protection organization to participate, with more than two transportation companies involved.
	Audit	A transport contract is valid for one year. Drivers should receive refresher training once every six months. The transport company receives an onsite audit that is part of the vendor audit.

The management mechanism for the production and delivery process of raw materials, substances, and finished goods:

The delivery route taken by tankers transporting hazardous materials is regulated in accordance with Article 84 of the Rules on Road Traffic Safety. All forwarders were officially informed by the factory that the "Rules Governing Safety and Health for Hazardous Goods Delivery" and "Transportation Violation Penalty Standards" are included in the contract and strict compliance is required.

Road audits include occasional inspection and GPS satellite positioning. These audits include occasional random inspections and vehicles can be followed to record the driver's behavior on the road, the driving speed, and unloading operations. GPS satellite positioning audits can be used to determine the vehicles position and to check if the driving speed and the idle time on the road have been reasonable, and the choice of route or zone been normal.

Supplier admission control mechanism

- 1. Forwarders are requested to comply with the signed admission management document that is included in the contract annexure:
 - (1) Contractors compliance commitments of Oriental Union Chemical Corporation Operation Safety Code
 - (2) Tanker driver compliance matters;
 - (3) Tanker operational safety management handbook;
- 2. Implement personnel, vehicles, cargos, and permit system, ID card control system and tanker weighing system to strictly control the admission of drivers, vehicles and their cargo.

Tanker transportation safety management mechanism

Ten freight forwarders were contracted by OUCC in 2016, of these, seven were for tanker transportation and included three gas tankers, three liquid nitrogen tankers, and one EOD tanker. These accounted for 70% of the total transportation service.

- 1. Ensure that forwarders comply with and sign the safety management mechanism related document that is included as a contract annexure.
 - (1) Tanker driver compliance: The environmental health and operation safety matters to be complied with under the supervision of OUCC and the disciplinary action to be taken when necessary.
 - (2) Tanker operation safety management handbook: The tanks and trucks of the forwarders (including the shipment dispatched outside the plant) are all obliged to be in compliance with the requirements of management.
 - (3) Tanker emergency evacuation plan: To avoid the transportation operation being interrupted by a typhoon. If the Linyuan area should be flooded and roads become impassable, this will ensure the safety of gas tankers and the normal dispatch operation of gas delivery.
 - (4) Tank (truck) autonomous vehicle checklist: Prepare the safety checklist for the truck driver to check and confirm safety in advance before a double check is carried out by the OUCC loading personnel.
 - (5) Trailer truck connection and disconnection point checklist: Tank driver shall check and confirm the trailer truck connection and disconnection before a double check is carried out by OUCC personnel.
- 2. Any transportation emergency or nonconformity must be reported and handled in accordance with the "Transportation Incident Emergency Response Operation" and an incident report must be issued within three days after the incident. The Transportation Accident Emergency Response Operation Mechanism was revised in 2016 to include 24-hour emergency notification hotline, emergency notification and contact method for each unit. Strengthen the education for colleagues on emergency notification inquiry and discussion focus, and establish an investigation SOP.



The OUCC is committed to the provision of a safe and healthy working environment and have made "zero accident, zero injury, and zero pollution" 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. It is our mission to create the best possible relationship with our employees, suppliers, contractors, customers, shareholders, and the community, and together we may achieve the vision of sustainable development.

The OUCC supports "responsible" industrial development and improvement in collaboration with the Taiwan Responsible Care Association (TRCA). We are committed to the pursuit of balanced industrial safety, health, and environmental protection in accordance with the purpose of the TRCA.



The OUCC employees have achieved the goal of environmental protection with "Safety and Health, clean production, continuing improvement, and full participation." Our industrial safety challenge is about how to build a "factory environment safer than home" and help all employees and suppliers understand, cooperate, and ensure the overall process and operation safety. We are therefore committed to ensure the health and safety of all personnel at the plant by carrying out all standard operations strictly according to SOP to the smallest detail.



The environmental safety and health policies are carried out in every part of the plant to make sure production runs smoothly. Well-developed industrial safety and environmental protection measures are implemented and there are personnel responsible for air, water and toxic pollution, and waste, etc. They plan, develop, supervise and promote environmental health and safety management. They are also responsible for equipment inspections and the guidance of implementation in other departments as well as equipment inspections related proceeding.



Dedicated Environmental Protection Personnel

- 1. Air pollution staff: Three Class A dedicated personnel.
- 2. Water pollution staff: Two Class A and two Class B dedicated personnel.
- 3. Toxic chemicals staff: Four Class A trained and qualified personnel.
- 4. Waste staff: One Class A trained and qualified personnel in waste management.

The OUCC has an Occupational Health & Safety Committee where the labor representatives account for 46% of the members. The OUCC has received ISO-14001 environmental management as well as OHSAS-18001 occupational health and safety management system certifications which ensure standard control and compliance. 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.

Labor Safety & Health Committee	Unit	2013	2014	2015	2016
The management level of Occupational Safety & Health Committee	Remark		Plant m	anager	
Total number of members of Occupational Safety & Health Committee	Person	12	12	13	13
Number of labor representative	Person	5	5	6	6
Percentage of labor representatives	%	42	42	46	46

The environmental health and safety risks assessment for employees is carried out in accordance with "ISO 14001:2004 4.3.1 environmental considerations" and "OHSAS 18001:2007 4.3.1 hazard identification, risk assessment and determine control method."

OUCC Safety, Health, and Environmental Principles

- 1. It is the responsibility of the staff as a whole to ensure a safe, healthy, and environmentally friendly workplace.
- 2. All injuries and occupational diseases can be avoided.
- 3. It is the responsibility of supervisors at all levels to train staff to work safely.
- 4. Employees are the most important company asset, and safety in work is also one of the conditions of employment.
- 5. Any nonconformity must be corrected as soon as possible.
- 6. Avoiding injury is a major employee contribution to the company.
- 7. Audits are necessary.
- 8. Contractor safety and management is as important as that of the employee.
- 9. Safety off the premises of the office and plant is also important to the employee.
- 10. Continue to improve clean production and be a good neighbor in the community.



The OUCC upholds the spirit of self-discipline, has joined the Taiwan Responsible Care Association (TRCA) to promote responsible care and has taken up six standard management guidelines (CODE): process safety, emergency response and safety, distribution safety, contractor safety, waste and reduction management, and product safety management.

OUCC cooperated closely in the environmental monitoring and sampling analysis carried out by the Kaohsiung City Environmental Protection Bureau and the Environmental Protection Administration of the Executive Yuan, ROC (Taiwan), in 2016. The results of the monitoring and sampling of the onsite soil and groundwater were consistent with groundwater pollution monitoring standards.

In addition, we cooperated with the Environmental Protection Administration of the Executive Yuan, for the promotion of the petrochemical process hazardous air pollutants reduction action and conducted an RTO-2 exhaust survey and analysis at the Linyuan plant with satisfactory results.

In addition to continued implementation of "ISO-14001 environmental management" we are actively promoting improvement in the effectiveness of the pollution prevention system and control. Eighteen underground monitoring wells have been prepared, as well as flammable gas monitoring stations to ensure environmental pollution prevention. The recycling of carbon dioxide is being done, waste gas incinerators and wastewater plants are being constructed and other environmental engineering projects are under way.

Amending Occupational Safety and Health Management Mechanism Standard Operating Procedures (SOP)

- 1. The "Hazardous Duty Consent Form," was amended to designate authority and responsibility of the personnel at all levels clearly, according to the danger or hazard of the task, and a third copy of the form is to be held at the on-duty supervisor's office for control.
- 2. Enact and amend the "Typhoon and Storm Prevention Graded Contingency Plan" to clearly define the activating timing for senior supervisors' stationing and discharge to be free from the weather impact.
- 3. The "Emergency Response Team Members and Mandate" was enacted and a regular emergency response organization was set up in the plant to strengthen incident response capability.
- 4. A "Pre-Startup Safety Review (PSSR) Procedure" was introduced to prevent operation, maintenance, or the related engineering safety problems when new or amended processes and equipment are just activated or started up.

In addition, the procedures in the preceding paragraph can help ensure that the process security measures have already been implemented, process safety information has been updated, safety devices and chains have been set up, and all the personnel concerned have received appropriate training before starting up and also to ensure that new or modified equipment and processes have been assembled properly according to the design and are safe for production.

Record of Awards from 2014~2016

Date	Awards
2014.01.01	The workplace of this plant has been declared a non-smoking area as a health promotion measure. This establishes a good healthy working environment, and it has received healthy workplace certification in the form of a health promotion mark from the Ministry of Health & Welfare.
2014.04.30	Passed ISO14001 and OHSAS18001 certification again.
2014.08.19	Received the SGS "Environmental Sustainability Award".
2014.11.21	A commendation was received from the Fengshan District Office of Kaohsiung City for a donation of 500kgs of EG to facilitate spraying operations to help contain a dengue epidemic in the community.
2014.12.24	The Kaohsiung Linyuan Plant received a "One Million Accident-Free Working Hours Record" certificate from the Occupational Safety & Health Administration, Ministry of Labor.
2015.11.06	Actively participated in activities of the toxic chemicals union defense operation organization, and received the toxic chemicals union defense operation outstanding management – Excellence Award from the Environmental Protection Administration of the Executive Yuan, ROC (Taiwan) in 2015.
2016.03.23	Kaohsiung City Fengshan District Office Certificate of Appreciation, a gesture of appreciation for OUCC's enthusiasm in public service by providing 500 kg of smoke agent ethylene glycol to help dengue epidemic prevention and control.
2016.07.14	Certificate of "Two Millions Accident-Free Working Hours Record" issued to Linyuan Plant by the Work Safety Association commissioned by the Occupational Safety & Health Administration, Ministry of Labor.

We believe that "no matter how big the plant, there can be no gray safety area, because a chemical plant without safe production is ineligible for an industry leader." To prevent failure and detection of abnormal conditions in a timely way, 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 for the inspected unit for improvement.

Response to the Safety Demands of Employees

Propose the improvement mechanism and implementation to effectively reduce the work safety risk through the regular "Occupational Safety & Health Committee, Contractor Agreement Organization Meeting". In 2016, we reviewed, improved and ensured the safety of employees in the plant on the safety and health items submitted by the employees through the in-plant safety meeting, the improvements are as follows:

- 1. Gas plant # 1 supplement exit system operating panel is installed outdoor, by which the operator may have the risk of being injured when the blown off objects during typhoon, we have made movable fence, in case of strong winds and other adverse weather, the fence can be fixed to block any blown off objects into the work area, to prevent the operator injured from the flying objects.
- 2. Call the Contractor Agreement Organization Meeting regularly, and the supervision units of the plant take turn hosting the meeting. Experience sharing, defect review, occupational safety publicity matters are submitted in the meeting to establish a good interactive platform for the occupational safety and health between the business units and the contractors.

Education and Training Project	Frequency	Hours	The number of participants	Investing amount
Fire safety				
Environmental Protection	Twice a year	6	320 persons each time	Estimated NT\$ 40,000 each time
Safety and Health	-			
Outsourced training for licensed occupation safety personnel	Regular	3~6	341 persons a year	NT\$ 99,172

Educational Training of 2016

Occupational Accident Statistics

Lo	st day rate (LDR)	Unit	2013	2014	2015	2016
	Work days missed	Day	0	0	0	0
Female labor	Total working hours	Hour	35,904	40,128	69,720	41,664
	LDR		0	0	0	0
	Work days missed	Day	23	0	0	0
Male labor	Total working hours	Hour	598,426	606,423	70,716	617,024
	LDR		7.69	0	0	0
Ak	osence Rate (AR)	Unit	2013	2014	2015	2016
	Total working days	Day	4,488	5,016	8,715	5,208
Female labor	Days absent	Day	0	0	0	62.5
10.001	AR		0	0	0	1.2
	Total working days	Day	74,803	75,803	883,015	77,128
Male Iabor	Days absent	Day	0	0	0	395.38
	AR		0	0	0	0.51
1	Injury Rate (IR)		2013	2014	2015	2016
	Male labor		0.33	0	0	0
	Female labor		0	0	0	0
Occupatio	onal Disease Rate (ODR)		2013	2014	2015	2016
	Male labor		0.33	0	0	0
	Female labor		0	0	0	0
cupational dis	(Number of persons disabled or injured / eases rate (ODR) = (Number of occupati R) = (Number of days lost due to illness /	onal diseases / Total workin	g hours) x 200,000	Total working o	iours = Actual statistical value in lays = Actual number of working nt = Actual statistical value in th	g days

Absentee rate (AR) = (Labor absence days / Total working days) x 100%

Total working hours = Number of employees x total working days x working hours per day (8),

Note: 1. 200,000 factor is used because each 100-employee works 50 weeks a year and 40 hours per week. 2. The OUCC absentee rate calculation is based on the number of absence days.

TAKE 5 Safety Training

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

Steps:

- 1. T Communication: (Stop, Step Back, Observe)
 - Do I understand my task?
 - 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?

2. A Action: (Think through the Task)

- 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?
- Did I read the contents of the permit?

3. K Knowledge: (Identify any Hazards)

- Do I know if there are any hazardous items surrounding the working environment?
- Possible slip, trip or fall? Will make 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?

4. E Equipment: (Control, Safety Protection)

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



Health and Safety Promotion Project

We have set "Rules Governing Workplace Health" for the safety and health of employees, visitors, and contractors, to avoid occupational risk and protect all the people in the plant. We also take steps to ensure that all personnel are qualified and competent for their assigned missions both physically and mentally. The OUCC Safety & Health Department has defined and implemented an operational environment test routine for the review, confirmation and control of occupational hazards.

We comply with the "Labor Health Protection Rules" in the implementation of general physical examination and health checkup for all plant employees. The Chungho Memorial Hospital of the Kaohsiung Medical University has been appointed by the Ministry of Labor and Department of Health as the medical institution responsible for the care of OUCC plant staff. A "Labor Health Checkup Handbook" is issued to all employees and their Safety & Health Department physical checkup records are kept for 10 years.

The hospital will inform the OUCC organizer and the employee of any abnormal findings before a written report is issued. They will assist the employee with further medical review, advice and treatment until recovery. In case the health condition is not suitable for the original work, after the evaluation by a doctor, it is recommended the person in charge of the unit to change the place or type of work for the employee. If the employee is a labor union member, the labor union will be notified to understand the employee's actual health condition and the handling status. Other relevant health and safety prevention measures include:

2016 Health Exam Interview Case



Two employees complained about lower back pain, so the Safety & Health Department visited their work environment, assisted improvement, and conducted health education for the improper environment / improper movement.



Incorrect sitting posture at any time.



- 1. Adjust computer monitor angle Correct direction and table chair angles.
- 2. When sitting, maintain back and thigh thigh and leg with 90 degrees angle.
- 3. Add cushion to support the back.
- 4. Maintain this correct sitting posture appropriately anytime and anywhere, do not raise leg or lie down on the side.







When carrying item, it is appropriate to squat down with bent knees -> pick up item -> then stands up with constant speed; do not stand up too fast.



- 1. A medical kit is located at the worksite in the plant and it is checked and replenished at frequent intervals. There are also two resuscitators available to strengthen emergency rescue capacity and two automated external defibrillator (AED) are installed in 2015.
- 2. There is a full-time physician and a nurse stationed in the plant to provide employees with healthcare and counseling.
- 3. Invited Linyuan Fire Brigade to teach AED + CPR in four separate classes, with a total of 324 people involved. Instructor teaching plus colleagues' personal practice to experience the practical learning, and timely correction until everything is done correctly.



- 1. One annual checkup and a re-check are arranged for every employee.
- 2. One annual checkup and one senior management health checkup every two years are arranged for managers and supervisors.
- 3. A counseling follow-up service is provided.
- 4. Health checkup report is provided with the checkup items described and health education is also provided.
- 5. A 4-cancer screening (National Health Bureau) is coordinated with the health checkup.



- 1. Assist employees and their families to get treatment and registration service.
- 2. Provide individual counseling service and suggest that employees avoid work in certain fields.
- 3. Regarding the occupational risk, assess potential risks, yet there is no high-risk occupational disease detected.
- 4. Quarterly urine drug testing.



- 1. Arrange health education advocacy at any time depending on the epidemic situation (please refer to the CDC & government health units).
- 2. Invite lecturers to speak about safety and health education at the plant.
- 3. Work with local health units to arrange health courses and advocate and support the policies of the government.
- 4. Advocate safety on a daily basis.
- 5. An alert announcement would be made when the PM2.5 measured by the Environmental Protection Agency is high to remind employees to wear mask outdoors and reduce strenuous outdoor activities.



- 1. In 2016, specially invited senior teacher Gen of the Meiho University to the plant to conduct four education training of "Body, Mind and Spirit Pressure Relief" in the first half of the year, to enhance the physical and mental health of employees. All plant employees were participated.
- 2. 2016/10/06, invited the plant doctor Dr. Dai to the plant education training classroom to conduct "Health Lecture on Chronic Disease Prevention and Control".
- 3. Conduct statistics and classification on the annual health exam results, track and understand the colleagues with abnormality and high-risk. The plant doctor will determine whether it is caused by the type of work or the environment, to conduct individual counseling health education and to assist medical treatment, and organize Health seminar in the factory.

Note : 1. According to information from the Ministry of Health about the top ten causes of death in recent years, heart disease is amongst the top three. Deaths caused by heart disease are mostly in the form of sudden cardiac arrest, and defibrillation is one way to help restore normal cardiac function.

^{2.} Automated External Defibrillator (AED) is an equipment that can automatically detect heart rhythm in a patient and administer electric shocks to help restore normal function. It is easy to use with voice instructions and the graphics provided. It is a fool proof device and it is thus called a "fool-proof" AED. Data Source: Ministry of Health & Welfare – AED First Aid Information Network (http://tw-aed.mohw.gov.tw/).





Air Pollution Control and Prevention

Pollutant emission	Unit	2013	2014	2015	2016
TSP	Ton	1.98	2.67	3.11	2.89
SOx	Ton	12.13	19.84	13.26	10.18
NOx	Ton	9.9	16.73	13.37	9.51
VOCs	Ton	44.46	46.67	47.31	45.86

Air Pollution Control (Linyuan Plant)

The Linyuan Plant has acquired eight Fixed Pollutant Operator Permits in accordance with Article 24 of the Air Pollution Prevention Act. The main air pollutant emissions are: volatile organic compounds (VOCs), ethylene oxide (EO), and ammonia.

The pollution prevention equipment in the Linyuan Plant includes: Two Regenerative Thermal Oxidizers (RTO), one Direct fired Thermal Oxidizer (DFTO), two Catalytic oxidizers, and seven Scrubbers with 99% pollutant removal efficiency.

Type of pollution prevention equipment	QTY (unit)	Pollutants
Regenerative Thermal Oxidizer (RTO)	2	VOCs
Direct fired Thermal Oxidizer (DFTO)	1	VOCs
Catalytic oxidizer	1	VOCs
Scrubber	7	VOCs



Waste Disposal

The OUCC has outsourced chemical waste removal to a qualified waste treatment company. Recycled materials, after preliminary classification in the plant, are donated to the community charitable organization (Tzu Chi) for further processing and recycling.

Treatment	Unit	2013	2014	2015	2016
Recycling	Ton	10.34	15.8	27.13	20.29
Incineration	Ton	205.33	146.866	210.76	207.73
Others (physical treatment and sanitation landfills handler)	Ton	1,268	1,652.82	952.926	799.37

Note: 1. Recycling waste includes: Paper, fluorescent tubes, plastics, glass, household appliances, etc.

2. Incineration waste includes: Mixed plastics, wood mixtures, lubricants, oil mixtures, household garbage, etc.

3. Other waste includes: Liquid with pH value < 2, ion exchange resins, insulation materials, fire-resistant waste, organic sludge, other single non-hazardous metal or mixed metal, non-hazardous organic waste or solvents, wires and cables, sandblasting waste, etc.

Recycling Statistics

	Unit	Paper	Fluorescent tubes	Plastics	Glass	Household appliances	Total
2013	Kg	6,700	40	1,050	2,040	510	10,340
2014	Kg	9,750	130	2,900	2,810	210	15,800
2015	Kg	17,210	140	4,590	3,940	1,250	27,130
2016	Kg	12,080	110	4,690	3,410	0	20,290

Environmental Issues Appeal Mechanism

The OUCC has stipulated operating procedures for "Environmental, labor safety and health, internal quality control, and external communication". All advice, complaints or grievances made by the public are dealt with by the Environmental Safety Division or the shift supervisor and are all recorded in the "External Communications Log." The Central Safety Committee depends on the Log content to ensure adequately trained security personnel respond in the shortest time. Minutes of any meetings held about the issue or investigation are kept and investigation or review of the issue must be carried out as soon as possible, depending on the severity of the matter.

We have "Liaison for Stakeholders" and "Liaison for Environmental Protection Business" setup with several smooth communications channels. Contact information is also provided on the company website to ensure any environmental issues are dealt with immediately. There have been no complaints filed with the company over the last four years after effective management was implemented.



Environmental Expenses and Fines

The OUCC values the importance of environmental protection and makes every effort to reduce environmental impact through the promotion of investment in environmental resources. We are convinced that only the effective management of environmental impact and minimization of the impact of company operation on the environment can allow a harmonious and prosperous relationship to be built between industry and the community, so will the sustainable development of the company be possible.

2014~2016 Environmental Protection Expenditures

ltem	Unit	2014	2015	2016
Environmental protection expenditure	NT\$	11,589,570	8,723,963	8,703,622
Soil pollution / sewage treatment costs	NT\$	5,866,799	7,863,403	8,665,630
Total	NT\$	17,456,369	16,587,366	17,369,252

The 2016 Environmental Protection Related Fines

Item	Amount (NTD)	Corrective Action
Before construction site runoff water pollution reduction plan got approved, the construction site had already been started. (2016.04.11)	27,500	Obtained permit, and then started construction
Equipment component leakage exceeded standard		1. Purchased TVA-1000 computer connection device to establish RECORD mode
(2016.05.06) (2016.09.13)	100,000 100,000	2. In addition to RECORD, implement TVA-1000 detection test and make record.
		3. Supervise the on-site personnel to implement the daily detection test.
Changed the responsible person in charge of the factory resulting in Industrial Waste Disposal Plan report pass due (2016.11.04)	6,000	Complete the Industrial Waste Disposal Plan report within 15 days according to the regulations.







Noise Prevention Measure

The OUCC plant "Noise prevention measures" include:

- 1. Notices of wearing 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.

Reduction of Workplace Noise

To reduce the impact of noise on employees in the workplace we introduced the "EG Plant Compressor (PC- 101RN) Noise Improvement Project" in 2015. The EG plant compressors are enclosed with noise insulating walls to reduce the harm of noise on employees.

Current project improvement status in 2016, the EOG plant PC-101RN noise source body has been enclosed, the pipeline is to be improved with sound proof covering project, the average improvement through the test results is 14dB, approximately NTD 6,500,000 was invested in this project.



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, education and training are arranged to help on-site staff quickly appreciate the situation at an accident site and react effectively, so to minimize the damage of the accident and its effect on people and the environment.



Even the slightest negligence in the handling of chemicals during manufacture, storage or transport may lead to a chemical spill, fire, poisoning, or even explosion that may physically injure or harm the health of employees or even cause serious work environment pollution and personnel casualties. The biggest challenge to the OUCC is how to prevent an accident in advance, on a daily basis, and also how to respond and resolve an accident should it occur.







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.

We use the "prevention is better than cure" strategy, and apply the concept of risk assessment to any potential risk in the production and manufacturing process. We apply simulation to predict the occurrence of possible disaster situations and use the results to formulate an emergency response plan. Education of the response teams is done and drills are held so that any inadequacy or insufficiency can be corrected in advance.

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.



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 in 2015 to reduce the incidence and consequences of accidental 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.

We engaged external experts who gave our personnel 100 hours of training sessions. These included general emergency response exercises, fire-fighting equipment operation, and mobilization of the emergency response teams. Staff from the Linyuan fire brigade are invited to instruct our personnel in the operation of the plant fire-fighting equipment. A total of 591 people/times took part in training sessions in 2016.

The 2016 Emergency Response Team Training List

Item	Date	Training Programs	Number of Participants
1	6/21, 6/24, 9/20	General emergency response exercise: Simulated ethylene oxide leak exercise	126 people
2	7/15, 7/19	Evacuation exercise	411 people
3	8/23	General emergency response exercise: Simulated CO_2 #3 field CO_2 leak exercise	18 people
4	8/23	General emergency response exercise: Simulated CO_2 #3 field ammonia leak exercise	18 people
5	12/23	General emergency response exercise: Simulated propylene oxide leak exercise	18 people

To ensure a convergent result for each emergency response, all emergency response plans were consolidated into one in the event of fire or leakage. We have also introduced simple and effective guidelines to ensure emergency response team members are fully aware of their particular role so they can make a correct and prompt response based on the nature of any incident.

No.	Potential disaster	Emergency Response Plan
1	Leak, fire	Emergency response team members and missions
2	Transportation incident	Transportation incident emergency response operation
3	Typhoon and storm	Typhoon and storm graded emergency response plan
4	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 Plant Manager or Director will use the reporting system to dispatch personnel to the site. The Environmental Safety Department (environmental protection related follow-up), Production Department (chemical-related follow-up), and Storage and Transportation Department (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 Safety & Health 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 Storage & Transportation Team shall dispatch one emergency vehicle equipped with emergency response equipment with all the necessary personnel to the accident scene.
- 5. Site commander: A 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 removed 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 goods or shift the tank and return it to Kaohsiung Plant for further processing.
- 9. Contact a waste disposal company that is equipped with vacuum slurry tankers as needed (such as, acids, alkalis, etc.) to help recover and transport the chemicals either in or spilled out of the tanker, clean the container, and drain the liquid from gutters and return it to the Kaohsiung Plant for further processing.
- 10. Decontaminate the ground and clean and wash 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 Kaohsiung Plant for the records and future reference.
- 12. Accident review: The Storage & Transportation 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.

Tanker Leak Emergency Response Exercise

In 2016, OUCC and Fu-Ming Transport jointly held the "Liquid Oxygen Leakage" emergency response exercise. The location was specially arranged in the Linyuan Plant, and the fire truck was dispatched to stand-by support, all colleagues were allowed to observe. The exercise includes the introduction and identification of the transport material hazards, introduction of the emergency response procedures at the scene, training of protective equipment and practical teaching of plugging leakage of the tanker. It simulated the situation when the tanker leaks gas, how the driver and the emergency response personnel control and manage the disaster site, including emergency response procedures, understanding and use of equipment and other skills, to strengthen the emergency response capacity of operating personnel. OUCC Fire Mobile Team also participated in the exercise, including rapid deployment of water lines, fire water cannon operation, the correct direction and movement of sprinkling water, etc.

Simulation scenarios

The Fu-Ming driver hauls the OUCC liquid oxygen tanker LO-101, heavy truck travels near Gongye 3rd Road, Linyuan Industrial Park, Kaohsiung City, hit by a large truck on the left side of the tanker, resulted in damage at the tanker evaporator pipeline, and the gaseous oxygen leak occurred. •

Exercises

- The response to a pipeline leak in transit;
- The driver's report of the incident and the precautionary measures taken at the site of the incident;
- How well the company personnel handled the situation after receiving notice of the emergency;
- Post-processing capability and aftermath: Site leak handling, review of the cause of the incident and the inclusion of other drivers in the review as a learning experience.







Energy and Climate Change

The issue of global warming and climate change has become a serious concern to industry. The energy supply in Taiwan relies mainly on foreign imports and is derived mostly from fossil-fuel that is more likely to produce excessive greenhouse gas emissions. The occurrence of extreme weather in recent years and an awareness of the need to save energy and reduce carbon emission has become a matter of urgency to both industry and the public.

The company understands that the energy and climate change issues will be even more closely linked to the future business environment and costs. We are therefore paying close attention to it, and, taking the existing and potential impact on our operations into consideration, are formulating appropriate energy saving, carbon reduction and greenhouse gas emission reduction strategy.



Being in the upstream supply chain of the chemical industry, we well understand that in addition to energy use, the challenge of the OUCC is to reduce the greenhouse gas emission of finished product by improving process energy efficiency and cooperating with suppliers and customers from the product life cycle perspective.

Another challenge is the R&D of products that have the environmental qualities to meet customer needs as well as to balance technology innovation and energy efficiency, surely a challenge to the Company's plant energy management.



Approach

(DMA)

To ensure that we can control and keep track of the energy situation in the OUCC plant, we started plant greenhouse gas inventory in 2014 in accordance with the ISO14064-1 inventory system. We also introduced the ISO14064-1 greenhouse gas management system in 2015 and have our inventory data verified by a public verification institution. The main purpose is to establish a systematic database for the energy consumption and greenhouse gas emission of the Linyuan production base.

At the same time, we also developed energy saving, greenhouse gas reduction and short, medium and long-term water saving targets, hoping to achieve the sustainable target in working with the action plan.

We are paying close attention to the industrial energy-saving and carbon reduction requirements imposed by the domestic authorities and have discussed OUCC carbon management and policy through the CSR Committee. We also request that each plant business unit should shoulder the responsibility for developing and implementing carbon management action plans and also to regularly disclose performance in carbon management and greenhouse gas emission for publication in the annual CSR report.

GRI indicator	Unit	2014	2015	2016
— `	Kilo-Liter	15.18	15.31	15.31
Gasoline	Gallon	3,995.53	4,029.74	4,030.00
	GJ	499.44	503.72	503.75
	Kilo-Liter	2,959	1,496	848.078
Fuel	Gallon	778,684.21	393,684.21	223,170.53
	GJ	112,130.53	56,690.53	32,136.56
	Kilo-Liter	368.15	777.1	548.84
Diesel fuel	Gallon	96,881.58	204,500.00	144,431.58
	GJ	13,369.66	28,221.00	19,931.56
	Kwh	320,848,073	354,742,076	423,035,185
Power 7	GJ	1,155,053.06	1,277,071.47	1,522,926.67
	ton	1,003,444	893,977	335,135
iteam	GJ	2,620,995.73	2,335,067.92	875,372.62
otal energy consumption	GJ	3,902,048.42	3,697,554.64	2,453,194.83
inergy intensity (Energy consumption/ Jumber of Employees)	GJ/ person	10,057	9,481	6,648
Jumber of Employees	Person	388	390	369

The OUCC Energy Consumption

Note: GJ data of 2014-2016 has been converted as a comparable contrast ratio.



Greenhouse Gas Emission (Summary)

			2014			2015			2016	
	Unit	Linyuan Plant	Taipei Head Office	Subtotal	Linyuan Plant	Taipei Head Office	Subtotal	Linyuan Plant	Taipei Head Office	Subtotal
Scope 1	t-CO ₂ e	77,236	3.01	77,239	66,732	3.18	66,735	48,012	3.39	48,015
Scope 2	t-CO ₂ e	236,544	43.69	236,588	254,214	45.57	254,260	292,417	46.46	292,463
Total emission	t-CO ₂ e			313,827			320,995			340,478
Number of employees	Person			388			390			369
Emission intensity	t-CO ₂ e/Person			808.8			823.1			922.7
Emission collection method	Remark				Ор	erational cont	rol			

Note : 1. The 2014 data is of self-inventory 2. The 2015~2016 data is certified by SGS-Taiwan

Greenhouse Gas Reduction Target and Implementation Strategies

Schedule	Management Objectives	Implementation Measures
Annual Plan (2017)	 The reduction target for 2017 is 3,210 tons. Annual purchase of green electricity 100,000 degrees (kWh). 	 Launch the ethylene recovery system. Implementation of energy efficiency and carbon reduction measures: Replace with high-efficiency motor, production process optimizing operation to stop use some pumps, compressors or fan motors, air conditioning efficiency improvement measures to reduce greenhouse gas emissions.
Mid-Term (2016-2020)	 Set 2015 as the reduction benchmark year, commit to average annual reduction of 1%, and estimate a total accumulated reduction of 16,000 tons (5%) by 2020. According to the Government's five-year greenhouse gas phase control target, the "Sector Greenhouse Gas Emission Control Action Program" approved for first phase 2016 - 2020 will be referenced to adjust the mid-term target of greenhouse gas reduction. 	 Choose high selectivity catalyst to reduce greenhouse gas emissions during production process. Evaluate/plan the introduction of low-carbon fuels, replace existing low-efficiency fuel oil boilers with natural gas steam electrical cogeneration system, and reduce the amount of purchased steam. Implementation of energy efficiency and carbon reduction measures: introduce energy-saving electrical equipment such as add inverter to the motor, circulate cooling water optimization management, save electricity used by water pump, introduce Energy Management System (ISO-50001), all employees participate in energy conservation and carbon reduction management activities, to reduce greenhouse gas emissions.
Long-Term (2030 and Beyond)	 According to the long-term goal of the Government's GHG emission reduction strategies, the emission reduction target for 2030 is set at 20% of the "Sector GHG Emission Control Action Program" approved for 2005. Commencing 2021, the power consumption ratio will take up a minimum of 1% of green electricity. 	Continue to plan the promotion of energy-saving and carbon reduction program, and focus on the study of low-carbon or carbon-free heat application technology, and greenhouse gas storage technology.

Note: Greenhouse gas emission 320,995 tCO2e/year in 2015 is the reduction benchmark.

Greenhouse Gas Emission (Linyuan Plant)

	CO ₂ emission	2013	2014	2015	2016			
Scope 1	Process, fuel	53,229	77,236	66,732	48,012			
	Power	168,534	175,276	189,563	223,316			
Scope 2	Outsourcing steam	76,608	61,268	64,651	69,101			
	Subtotal	298,371	292,417					
Emission coefficient sources	Remark	EPA GHG emissio	on coefficient management list 6.0.1 version	EPA GHG emission coefficient management list 6.0.3 version				
Global warming potential (GWP value)	Remark		IPCC The 2 nd Assessment Repo	ort 1995	IPCC The 4 th Assessment Report 2007			
Emission collection method	Remark		Operational control					
Total (t-CO ₂ e)	tal (t-CO ₂ e) 282,416 3		313,780	320,946	340,429			

Note: 1. The 2013 data is of self-inventory 2. The 2014~2016 data is certified by SGS-Taiwan



Greenhouse Gas Emission (Taipei Head Office)

	CO ₂ emission	2013	2014	2015	2016
Scope 1 —	Official car fuel consumption	1,058	1,331	1,373	1,497
	Official car CO ₂ emissions	2.39	3.01	3.18	3.39
(Power consumption	103,046	83,705	87,253	87,985
Scope 2 –	CO_2 emission (t-CO ₂ e) from electricity consumption	53.79	43.69	45.57	46.46
Total (t-CO₂€	:)	56.18	46.71	48.75	49.84

Note: 1. The 2013~2016 data is of self-inventory

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/

Ethylene Recovery Unit Improvement

An ethylene recovery unit was installed in 2015 which uses permeable membranes to recover ethylene and methane as well as Argon emitted. With the 2016 trial verification, the average ethylene recovery rate was about 55%, the methane recovery was about 43%, and the CO_2 average exhaust reduction was about 5,100 t- CO_2 e.

Electricity Saving

Schedule	Management Objectives	Implementation Measures
Annual Plan (2017)	Annual electricity saving rate of 1%, i.e. 3,400,000 degrees (kWh), as objective.	 Replace with high efficiency motor. Operation Optimization: Stop using some of the pumps, compressors or fan motors. Air conditioning efficiency improvement.
Mid-Term (2016-2020)	 Annual electricity saving rate of 1%, 5 years accumulation of 5% as the management objectives. Production used electricity accounted for 70% energy proportion, therefore, other fuel and steam savings program are also planned to save energy by 1% annually, 5 years accumulation of 5% as the management objectives. 	 Introduction of energy-saving electrical equipment (such as frequency converter). Circulating cooling water optimization management to save electricity used by water pump. Introduce Energy Management System (ISO-50001) standardized construction, full participation in energy-saving carbon reduction management activities.
Long-Term (2030 and Beyond)	Set 2016 as the energy consumption base period, to achieve energy saving of 10% beyond 2030 as the management objectives.	 Continue to improve energy efficiency and carbon reduction management. Evaluate the installation of waste heat recovery or steam electrical cogeneration equipment. Evaluate the use of low-carbon fuels to improve combustion efficiency.

Greenhouse Gas Emission (Linyuan)

Energy savings result	Unit	2015	2016
Amount invested for process improvement	NTD	21,517,304	0
Energy consumption reduced by process improvement	GJ	110,309	3,946
Amount invested for equipment improvement or renewal	NTD	261,514,451	256,000
Energy consumption reduced through equipment improvement or renewal	GJ	1,452	173
Total investment amount for energy saving	NTD	283,031,755	256,000
Total energy-saving (Compared with the previous year)	GJ	111,761	4,120

 Note:
 Please refer to Table - Energy efficiency Improvement Project

 1. 2016 process improvement project was "Reduce the loading of EA plant ammonia recovery compressor"

 2. 2016 Equipment Improvement and Renewal Project was "Exhaust Fan Operation Improvement"

Energy Efficiency Improvement Project

In order to implement energy efficiency and carbon reduction, we carried out the following energy conservation measures in 2016:

- 1. Adjust the operating conditions of EA plant ammonia recovery compressor (C2-201), and reduce the loading from 100% to 50% to meet the production process requirements. Estimated annual electricity savings of 1,096,718 kWh.
- 2. The positive pressure of the second floor of Research Building cannot be maintained. Through the administrative management improvement, connect the 25HP and 10HP exhaust fan inlet tube on the roof of fourth floor, and only start the 25HP exhaust fan to perform operation, do not activate the other 10HP exhaust fan. Estimated annual electricity saving efficiency of 48,180 kWh.

Both projects above have been completed, converted to CO, annual average reduction of approximately 605MT/Y.

- 3. Re-plan and re-adjust the amount of water in each cooling water tower of Linyuan plant, optimize the cooler water volume of each cooling water tower (GT-1201/GT-1202/GT-1204) of EOG Plant #1/#2/#4, re-adjust the distribution of water supply of each water tower, and proceed with the pipeline modification program. Pipeline modification overhaul construction has been completed in March 2017, pending testing after launching.
- 4. EA / GAS / EOD plant water volume adjustment program is still in planning.



Reducing the Impact of Transportation on the Environment

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 (There are only three firms in Linyuan Industrial Park provide free employees shuttle bus), or to join the car pool system for commuting, to cut down on the use of vehicles and indirectly reduce the emission of greenhouse gases.

In addition, we are reducing carbon emission by cutting down on travel between Taipei and Kaohsiung and increasing the use of video conferencing. The monthly management meeting is a good example: Twelve meetings were held in 2016 and ten people would travel on Taiwan High Speed Rail "Taipei – Zuoying" generating 12.91 kg of CO_2 emission per person (based on the carbon footprint announced by HSR). The CO_2 reduction reached was 12.91 × 10 persons × 12 times = 1,549kg, as a contribution to the effort of easing global warming.

The Mitigation of Transportation Emission

Action I: To reduce the greenhouse gas emission from employee commuting

The utilization of carpools after a quantization under Category III will also be applied as a reference for a more efficient transportation plan for the future reduction of employee travel emissions.

Employee Commuting Carbon Emission Calculation

Based on the calculation of carbon emission by staff at the Linyuan plant:

- 1. Linyuan plant employees: 332 people (Commuters by shuttle bus: 252 people; commuters by cars: 80 people), the number of transportation vehicles: shuttle bus: 5 bus-trip per regular working day, 3 bus- trip for rotating shift per day.
- According to the ITRI research published by Environmental Protection Administration of the Executive Yuan, the traditional engine cars and buses mileage carbon emission coefficient and its associated calculation is as follows:

 Ordinary engine car: the average carbon emission = 0.214 kg/km
 City bus: the average carbon emission = 1.01 kg/km
- 3. The average commuting distance = 50km
- 4. Regular working days = 248 days, working days of rotating shift = 365 days
- 5. Employee commuting carbon emission = 0.214 Kg/km x 50 km/day x 80 people x 248 day +
 - 1.01 kg/km x 50 km/day x 5 bus-trip/day x 248 day +
 - 1.01 kg/km x 50 km/day x 3 bus-trip/day x 365 day
 - = 330.21 ton/year
- 6. Re-signed the contract in 2016, requiring the use years of shuttle bus to be down from 6 years to 5, and to prompt the passenger bus manufacturers to replace vehicles with the new energy-saving model, to facilitate the reduction of carbon emissions.



Action II: Enhancing the fuel efficiency of outsourced tankers

We started from supplier management and introduced strict procurement specifications for outsourced tankers. A condition of the 2016 tanker outsourcing contract stipulates that no truck head may be over 15 years in use. This encouraged the use of new energy-saving truck heads. A total of 13 vehicles were retired in 2016. The CO_2 emission and energy generated in the transportation process was reduced effectively through this supplier CSR management mechanism.

Tanker Transport Emissions Calculation (Scope3)

Tankers traveling distance and diesel consumption calculation: The total transportation mileage in 2016 was 21,986,850 km and the annual transportation diesel consumption was estimated to be 7,328,950 liters and the energy consumption was about 241,083.88 GJ.

Note: According to the standard industry data, large vehicle fuel consumption is 3 km/liter (diesel).

Water Resource Management

The protection of water resources and the development of water-saving technology have become issues of great importance due to the gravity of global climate change. Although with abundant rainfall, Taiwan suffers from water supply instability and is often faced with water shortage due to its terrain formation.

The water for the OUCC Linyuan Plant comes from the Fengshan industrial water Reservoir. To fully utilize water resources, an investment was made in a water demineralization system years ago, and recycled process wastewater for the cooling tower. Currently, further investment is planned for the recovery of cooling tower wastewater. Moreover, the electrochemical and Electrodialysis Reversal measures for reducing the hardness of the water and for the wastewater recycling and reuse for cooling tower are under consideration.

The OUCC will continue to face the challenges involved in the protection of the environment and water resources and promote improvements in our processes and technologies and actively seek for the best water management solution to fulfill our corporate social responsibility. The current assessment for the planned wastewater recovery system is scheduled to complete the feasibility study in the second quarter of 2017. The initial objective is to recycle 70% of the discharged water to be used for replenishing the cooling tower water supply.

Water Resources Reduction Objectives

Schedule	Management Objectives Implementation Measures					
Annual Plan (2017)	Set the 2016 daily water consumption as benchmark, commit to reduce 2%, saving about 100 metric tons of water.	 Cooling water system optimization or system thermal integration to reduce evaporation losses. Actual improvement of the cooling tower concentration multiple to higher than 7. Post water-saving slogans and posters, and strengthen the promotion of water conservation concept. Replace with automatic sensor faucet in the bathroom. 				
Mid-Term (2016-2020)	Set the 2016 daily water consumption as benchmark, commit to reduce 20%, saving about 1,000 metric tons of water.	 Continue the planning of implementing water conservation plan and water conservation management program. Evaluate / plan for the construction of discharged wastewater recovery facilities. 				
Long-Term (2030 and Beyond)	Set the 2016 daily water consumption as benchmark, commit to reduce 50%, saving about 2,500 metric tons of water.	 Evaluate the use of recycled water to replenish the cooling tower water. Evaluate / plan for cooling water tower exhaust condensate recycling. 				

Note: 2016 daily water consumption is 5,000 metric tons

Drinking Water and Production Water System Bypass

To reduce water pollution, improve water consumption efficiency, and safeguard the health of our employees, on account of the current water consumption at Linyuan plant and demand for household water from the same source, an independent domestic water consumption mechanism was planned. In 2016 the water supply for domestic usage will be totally separated from the plant water system. Further, to prevent the possible contamination of domestic water by plant water, an independent stainless steel storage tank for domestic water will be installed, replacing the original carbon steel tank, along with its own pumping and pipeline system. An amount of NT\$3.5 million has been allocated for this project which will be implemented in two-phases:



Step 1 A separate domestic water source with its own exclusive water tank and pump was completed and put into operation on 03/15/2016.



January 2017.

Step 2 Connect the additional domestic water consumption pipelines of EOD, EA2, GAS, and the EC plant and change Eyeshower water source from the plant water supply to the domestic water supply. This task is complete by the end of

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 61-WI-278 "Procedure for OUCC production process wastewater discharge" stipulating emission limits of COD<100ppm and SS<30ppm. 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.

Tap Water Usage Statistics

	Unit	2013	2014	2015	2016
Linyuan Plant	M ³	1,708,523	1,912,869	1,816,317	1,905,697
Taipei Headquarters	M ³	936	1,602	1,608	767
Total	M ³	1,709,459	1,917,471	1,817,925	1,906,464

Note: Taipei Headquarters 2013 figure was estimated from the unit price of water. The 2014~2016 figure is based on the water bill data.

Wastewater Discharge

Classified by water quality and discharge destination	2013	2014	2015	2016		
The total amount of wastewater discharged m ³ /year	624,538	686,885	550,627	594,408		
Discharge destination Piped into the joint wastewater treatment plant.						
Water quality and discharge	In line with the Effluents Standard / activated sludge treatment method.					
Standards, methods, and assumptions	Joint wastewater treatment plant limit.					
		_				

Note: In 2016, OUCC executed de-bottlenecking project to increase production capacity and resulted in the increase of wastewater to 594,408m₃/year.

Electronic Signature for Archives

To facilitate the countersigning of documents and forms by the management from both Taipei office and Linyuan plant, the electronic signature system has been developed with the following benefits:

- 1. The heads of departments can sign documents and forms online and this not only saves paper, but also saves time and improves efficiency.
- 2. Files that are prepared and stored in the document database are secure and cannot be easily misplaced. The system provides an intelligent search engine for indexes and queries as well as allowing inter-departmental file access, a process that is both easy and time saving.
- 3. The electronic sign-off process is transparent and readily accessible for follow up approval, to track progress and to allow comments from other department heads.
- 4. The file archiving system uses a "one-time random password" file protection technology to control access for reading, printing, saving as PDF and as the original. It also preserves a record of file formation, revision, deletion, and reading. The file watermark can be used to effectively remind employees of the importance of document & data security.

SUSTAINABLE PARTNERSHIP

Agood partnership plays a vital role in the OUCC operation that includes employees, suppliers, and the residents of the community. Enterprises that seek sustainable development must listen to the voice of partners, substantiate care, and conduct the appropriate communications. We believe that a sustainable partnership will help the OUCC move towards a better future, develop better products, and construct a safe and stable work environment.

A focus on compliance and response to customer requests is the main OUCC operational objective and the company works incessantly to enhance participation of the stakeholders, provide the correct information to the ones who care about the OUCC and those we care about. We maintain excellent interactive relationships, continue to optimize manufacturing processes and plant environmental safety and health, and strengthen participation in all social activities.







EMPLOYEES



The OUCC is committed to the creation of a healthy and safe workplace, the development of an appropriate and adaptable staff training program and the construction of a fair and free work atmosphere with sound welfare, work environment, organization and culture cultivation. We make sure there is a balance between work and non-working time for our employees.

Our staff management system is based firmly on the labor laws. We have established an appropriate management system. Employees are assigned to the most suitable job positions depending on their technical and functional competence. There is no discrimination based on gender, religion, nationality, political or personal belief, or ethnicity with respect to employment, salary, performance evaluation, promotion, education and training, or personal benefits. And we set up an employee complaint management practice, to maintain a smooth channel of appeal and ensure labor rights.

We inform the employees of company operating results and conditions using internally published documents or regular formal or informal departmental meetings. The information transparency between employers and employees is ensured and timely.

Hiring of Employees

The OUCC arranges recruitment in accordance with application made by the individual department and approved by the President. Candidates are interviewed by the HR and the department that made the request. Child labor is strictly prohibited and we comply strictly with the relevant labor laws and regulations and protect the rights of all employees.

The work involved in the chemical industry can be physically taxing and in persistency, so it is important that workers at the production sites be physically fit. This means that the percentage of male employees (including direct and indirect employees) is higher than that of female employees. However, the OUCC values and cares about the development of female employees and those with excellent performance are promoted in accordance with the same principles applicable to male employees.

OUCC Employment

Year Total Number of Employees		2	2014	2	015	2	016
		386			391	:	369
Demostie en elevere	Male	351	90.93%	356	91.05%	336	91.06%
Domestic employees	Female	34	8.81%	33	8.44%	31	8.40%
	Male	1	0.26%	1	0.26%	1	0.27%
Foreign employees	Female	0	0.00%	1	0.26%	1	0.27%
F	Male	352	91.19%	357	91.30%	337	91.33%
Employees	Female	34	8.81%	34	8.70%	32	8.67%
Cupanisad worker	Male	0	0.00%	0	0.00%	0	0.00%
Supervised worker	Female	0	0.00%	0	0.00%	0	0.00%
Direct personnel	Male	87	22.54%	83	21.23%	81	21.95%
	Female	0	0.00%	0	0.00%	0	0.00%
Indirect personnel	Male	265	68.65%	274	70.08%	256	69.38%
indirect personner	Female	34	8.81%	34	8.70%	32	8.67%
Dermanant contract	Male	350	90.67%	353	90.28%	336	91.06%
Permanent contract	Female	34	8.81%	34	8.70%	32	8.67%
T	Male	2	0.52%	4	1.02%	1	0.27%
Temporary contract	Female	0	0.00%	0	00.00%	0	0.00%
Arred wedge 20	Male	14	3.63%	18	4.60%	14	3.79%
Aged under 30	Female	5	1.30%	4	1.02%	3	0.81%
A = = d 20 50	Male	254	65.80%	264	67.52%	259	70.19%
Aged 30-50	Female	21	5.44%	22	5.63%	21	5.69%
A seed shows 50	Male	84	21.76%	75	19.18%	64	17.34%
Aged above 50	Female	8	2.07%	8	2.05%	8	2.17%

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

 2. "Indirect personnel" refers to plant non-shift employees.

 3. "Permanent contract" refers to non-contractual employees who are hired officially.

 4. A "Contract employee" is an employee contracted for a certain period, for example, consultants or commissioned managers.

The OUCC headquarters is in Taipei City and the factory is in the Linyuan Industrial Zone of Kaohsiung County. To promote and increase employment opportunities for the region, close to 30% of the employees at the Linyuan Plant are local residents. We take direct action to support and encourage local employment.

Job Title	Number	of persons	Percentage		
	Linyuan	Non-Linyuan	Linyuan	Non-Linyuan	
Engineer / Manager and above	14	147	4.22%	44.28%	
Operation-Foreman	11	19	3.31%	5.72%	
Operation-Operator	83	58	25.00%	17.47%	
Total	108	224	32.53%	67.47%	

Percentage of Kaohsiung Plant Employees from Linyuan Area

There were 369 employees on the payroll in 2016, including 32 females who accounted for 8.67% of the total. Most OUCC employees are of the age where their children are mostly beyond infancy. In 2016, 40 male employees and 4 female employees were eligible for parental leave; 1 employees applied parental leave. 23 employees, including 22 male and 1 female employees, resigned or retired in 2016.

Employee Turnover and Turnover Rate

	2014			2015				2016				
	Male		Male Female		Ma	le	Fem	ale	Male		Female	
	person	%	person	%	person	%	person	%	person	%	person	%
Aged under 30	0	0.00%	0	0.00%	1	0.26%	1	0.26%	1	0.26%	0	0.00%
Aged 30-50	6	1.55%	1	0.26%	9	2.33%	3	0.78%	11	2.81%	1	0.26%
Aged above 50	11	2.85%	0	0.00%	15	3.89%	0	0.00%	13	3.32%	1	0.26%
Total	17	4.40%	1	0.26%	25	6.48%	4	1.04%	25	6.39%	2	0.51%

Note: 1. Employee resignation and retirement by gender calculation formula: Number of employees resigning (includes retirement but does not include involuntary leave)/ Total number of employees of the year.

There were 386 employees in 2014, 391 employees in 2015, and 369 employees in 2016.
 The age distribution of employees is based on the ratio of annual turnover to the total number of employees on the payroll.







New Recruitment

		20)14			2	015			2	016	
	M	ale	Fer	male	M	lale	Fer	male	м	ale	Fer	nale
	person	%										
Under 30	10	2.59%	3	0.78%	9	2.30%	2	0.51%	2	0.54%	0	0.00%
Aged 30-50	19	4.92%	1	0.26%	20	5.12%	2	0.51%	3	0.81%	0	0.00%
Above 50	2	0.52%	0	0.00%	1	0.26%	0	0.00%	0	0.00%	0	0.00%
Total	31	8.03%	4	1.04%	30	7.67%	4	1.02%	5	1.36%	0	0.00%

Note: 1. The new recruit ratio by gender calculation formula: Number of new recruit/ Total number of employees of the year.
2. There were 386 employees in 2014, 391 employees in 2015, and 369 employees in 2016.
3. The age distribution of employees is based on the ratio of annual new recruitment to the total number of employees on the payroll.

Number of Employees from Minority Groups

Year	2014	2015	2016
Aboriginal employees	1	1	1
Disabled employees	3	3	3

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 is a declaration by the employee to abide by the company rules and regulations and also those of personnel management, as well as a 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.

1. Code of Conduct and Code of Ethics:

Work rules include: (1) General rules (2) Employment (3) Service, holidays, days off, special leave (4) Request for leave (5) Salary (6) Year-end bonus (7) Safety, health, welfare, pension, and occupational accident compensation (8) Discipline (9) Performance evaluation and reward & penalty (10) Resignation, termination, and severance (11) Retirement (12) Annex.

2. Confidentiality commitments:

(1) The definition of confidential information (2) Confidentiality obligations (3) The legal effect of breach of contract and breach of contract liability (4) Effect after the termination of employment (5) The transfer of rights (6) The applicable law and jurisdiction.

Comprehensive Staff Training

Talent is the most important asset of the OUCC and is also the basis of sustainable development. The key to nurturing human resources is to help employees strengthen their technical capacity through practice and work training while encouraging the enthusiastic acceptance of challenges at work to aggregate and inspire new work value.

The OUCC upholds the values of "sincerity, diligence, thrift, prudence, and innovation" to establish an appropriate "talent selection, incubation, application, and retention" system in response to development of the industrial environment.

To achieve these objectives, the OUCC has implemented a range of appropriate training programs for employees from the beginning. There is an extensive education and training program available that allows employees to build up mid- and long-term technological capabilities together with those accumulated continuously from on-the-job training and sharing. Both help them find the stage to demonstrate their expertise.

In terms of nurturing talent, the OUCC provides professional training related to business management and plant management, and actively cultivates participation in the relevant professional and technical courses. This stimulates managers and potential managers and helps them improve the quality of manpower, to create a win-win situation for employees and the company by fulfilling all the operational needs.

New recruits at the OUCC will receive general training from the HR Department and will then be trained by personnel in the department in which they will be positioned. Professionals with all the necessary qualifications will help to train the new recruits and assist them in obtaining the relevant licenses and certificates.

Training Content
The Administration Office introduces the history of the company and work rules, departmental introduction, internal training of the specific department
Organizational internal training, mandatory training, professional training (first pressure container, high pressure gas specific equipment, person in charge of anoxic operation, forklift truck, fixed crane, specific chemical substances, boiler, etc.)
Leader selection and nurturing programs, basic finance and accounting, talent management for furthering performance

Note: General staff (team leaders and subordinates) and management staff (team leaders and superiors)

Employee Training Hours and Input

		20)14	20)15	20	016
Type of Employee	Gender	Total training hours	Average training hours	Total training hours	Average training hours	Total training hours	Average training hours
General Staff – Direct Labor	Male	918	10.55	228	2.75	519	6.41
General Stall – Direct Labor	Female	0	0	0	0	0	0
General Staff – Indirect Labor	Male	4,963	18.73	10,668.5	6.09	5,257	15.6
	Female	188	5.53	199	5.85	143	4.47
Tetel Tecinic e Ula una	Male	6,099	17.33	10,985.5	30.77	7,100	21.07
Total Training Hours	Female	203	5.97	212	6.24	171	5.33
	Male	99	6.19	72	3.79	179	9.42
Middle Management	Female	9	4.5	2	1	4	2
C M	Male	119	19.83	17	2.84	55	6.88
Senior Management	Female	6	3	11	5.5	12	6

Note: Definition of employee: General employee-grade 8 and up, mid-level management-grade 7,6,5, senior management-grade 4 and down.

The OUCC Training Investment Statement

	Unit	2013	2014	2015	2016
Total employee training amount	NT\$ million	0.76	0.94	0.66	0.67
Total employee training hours	Hour	11,626	14,578	11,128	6,428
Total number of employees	Person	375	388	390	369
Total employee training amount / Total Revenue	%	0.0055%	0.0076%	0.0056%	0.0025%
Total employee training amount / Total number of employees	NT\$	2,019	2,435	1,683	1,821
Total employee training hours / Total number of employees	Hour	31.00	37.57	28.53	17.42

Potential Personnel Training

A potential talent and leader nurturing mechanism has been implemented to search for competent successors for existing supervisory and management posts. Promising personnel are selected to take part in short-term management seminars and encouraged to participate in management master programs in domestic universities to enhance their management capacity.

The nurturing record of job rotation, training which aim to equip the personnel with comprehensive operation familiarity is filed with HR. Job rotation and promotion programs to enhance education and training has facilitated the cultivation of competent successors for managerial and supervisory posts.

Far Eastern Group affiliates started cooperating with the Yuan Ze University and the Oriental Institute of Technology in 2012 in the "Industry-Academy Internship and Talents Training Program" to help talented students with practice and training and to cultivate talent needed by the Far Eastern Group in the future. OUCC has participated in the plan and has accepted internship applications from Yuan Ze University students and is looking for those with the kind of skill that will be needed by the Company in the future.

Reward Mechanism

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. According to the "Rules Governing the Payroll."

A. Annual salary adjustments are approved in accordance with operating results and industry salary adjustment.

B. Staff performance evaluation is as follows:

- **1. Excellence A** 90~100 points Outstanding performance with special tangible or intangible contribution to the company (evidence enclosed)
- 2. Excellence AB 85~89 points Outstanding performance
- 3. Above average B 80~84 points Performance in line with operational need (above average)
- 4. Average BC -70~79 points Performance in line with operational need
- 5. Below average C 69 points or less Poor performance, not in line with operational need, no pay raise, job transfer, demotion, or dismissal. (evidence enclosed).

C. Principles for annual staff performance evaluation are separately prescribed and depend on market conditions. The performance evaluation criteria include:

- 1. Employee job performance.
- 2. Employee job responsibility.
- 3. The competitiveness of the current employee salary in the salary market.
- 4 Job performance and salary relationship of employee and subordinates, supervisors, and colleagues.
- 5. Budget.



Performance Evaluation

The OUCC has clear specifications for employee performance evaluation and employee incentive which are defined to substantiate the development of talent and decide pay differentiation. To maintain both equity and employee development, managers at all levels will discuss daily performance with the staff during the evaluation period.

The OUCC employee performance evaluation system includes: probation evaluation, routine evaluation, project evaluation, and annual evaluation. New recruits are evaluated for qualification after a 6-month probation period to confirm their competence.

All employees (including the President) are evaluated annually after a one year term of employment. Performance is evaluated every year and includes attendance, leadership skills, work ability, work performance, and so on. In addition, any particular merits or demerits, should be reported to the Personnel Review Committee and to the President for approval before commendation is given, or disciplinary action is taken.

Pension Mechanism

We have implemented an employee retirement plan in full compliance with the "Labor Standards Law" and "Labor Pension Act." The sound financial system of the OUCC ensures that retired employees will have a guaranteed pension and will be able to work for the company and develop a career without worrying over their future financial security.

The rules for employment, service, performance evaluation, incentive and disciplinary act, promotion, and retirement pension are all set out in detail in the "Work Rules" of the OUCC. The Labor Pension 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, investment and implementation to protect the interests of the employees. 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.

When the Oriental Petrochemical (Yangzhou) plant was being constructed in Yangzhou China in 2008, we took advantage of some of our mentally and physically fit professional retirees whose experience and knowledge made their contributions as consultants invaluable to the project.

Employee Benefits

The OUCC has Employee Welfare Committee, which in addition to the lawful benefits, arranges welfare activities for the employees that include an annual dinner, 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. The welfare committee also organizes employee annual tours and other activities, in addition to the health checkups, to keep balance of the physical and mental health of employees. The meal allowance offered to our employees was increased from NT\$1,800 to NT\$2,400 per month from July 2015. The employee benefits expenses totaled NT\$73,168,267 in 2016 with welfare subsidy of NT\$3,204,807.

According to the Article 33 of the OUCC Incorporation, OUCC shall appropriate 1%~2% of any earnings as remuneration for employees. If the Company accumulates a loss, an equivalent amount should be reserved as compensation.

	Unit	2013	2014	2015	2016
Pensions	NT\$	21,636,447	23,086,913	22,678,660	23,386,747
Insurance expenses	NT\$	29,292,739	30,258,237	30,620,549	29,773,900
Employee (profit) recompense	NT\$	21,914,302	18,261,918	17,337,837	0
Special bonuses	NT\$	24,271,566	19,938,495	19,090,734	9,744,498
Shuttle bus	NT\$	11,028,307	10,957,465	9,366,375	9,089,456
Employee health checkup	NT\$	1,425,572	1,121,200	1,436,971	1,173,666
Total	NT\$	109,568,933	103,624,228	100,531,126	73,168,267

The OUCC Employee Benefits Expenses

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, interestfree 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.



For the employees from Linyuan area and those who reside beyond reach of the shuttle bus, the Company provides each with transportation subsidy, which totaled NT\$1,753,400 in 2016.

Sum of Subsidy

	Unit	2013	2014	2015	2016
Subsidy amount	NT\$	1,706,100	1,681,900	1,731,400	1,753,400



The 2016 Welfare Measures List

Welfare measures	Description	Subsidy amount (NTD)	Number of beneficiaries (person)
Marriage subsidy	Staff marriage subsidy, NT\$2,000/person	20,000	10
Childbirth subsidy	Employees childbirth subsidy, NT\$1,000/per birth	8,000	8
Hospitalization subsidy	Staff hospitalization subsidy, NT\$1,000/time	4,000	4
Staff travel subsidy	Full subsidy for each employee, partial subsidy for maximum three lineal family members	1,238,433	Employee: 137 Family member: 123
Social group activity	Encouraging employees to organize social group activities, each social group NT\$10,000/year, Taipei Office social group NT\$13,000/year	183,000	270 Approx.
Birthday celebration subsidy	Staff birthday celebration, NT\$2,000/person	754,000	377
Year-end dinner	Employee year-end dinner	478,650	250
Retirement Benefits Application	Employee retirement gifts	518,724	13
Total		3,204,807	

Club Activity

The OUCC does not have a large number of employee but they are as close as family. Our employees develop all kinds of associations for exercise and stress relief. There are currently 20 clubs that receive annual grants from the company and a total of NT\$163,000 was provided in grants (to 16 clubs) in 2016.

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.







Women's Health in the Workplace

To protect the health of our female employees at the Kaohsiung Linyuan plant we have had the "Maternal Employee Health Plan" available for female employees who are pregnant, will be pregnant, likely pregnant, and within a period of one year after birth. This provides physical and mental health care during pregnancy, childbirth, or nursing period. In addition, we have set up a "nursing room" for breastfeeding. In 2016, added female changing and dressing room on the first floor of the Repair Building, to properly take care of female employees.

Maternal health protection measures, including the assessment of hazard & health risk and control, the interviews with physicians, risks classification management, adaptive work allocation and so forth, are chiefly for those female employees who might be exposed to hazardous working conditions. A "Healthy Mothers Protection Committee" has been established by Human Resources Department, the Department of Safety and Health, 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.



Prevention of 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 work hours, that affected the physical capability and caused the risk of cardiovascular disease.

The Linyuan Plant "Occupational Safety & Health Committee" holds meetings every three months. The plant nurse reports health service related matters concerned with the prevention of bad health conditions triggered by abnormal workload and all the health management, occupational disease prevention, health promotion, and other health protection matters are reviewed at the meeting. In addition, we have arranged for plant nurse to assess personal fatigue risk factors, working patterns and environmental risk factors, as well as the monthly overtime hours of employees with abnormal workloads. Health management measures are taken according to different levels of workload to safeguard employee health.

Transparent and Smooth Communication

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

The OUCC pays careful attention to the voices of the employees and cares for them. The Company promotes healthy communication with their employees using a range of different means. In addition to regular labor-management meetings, the Company communicates and discusses the operating conditions and objectives by means of special internal meetings.

OUCC has a Labor Union formed to protect the rights of employees and which gives them freedom of association and collective bargaining power. We believe that the union represents the viewpoint of the majority of employees on all labormanagement issues and harmonious labor relationships can be effectively established through proper communication with the union, and a good working environment be created.

All decisions which result in significant operational changes, are discussed at regular Board and other related meetings, after which they are presented to the employees and union representatives through the staff meetings, plant operation meetings, or through other suitable channels. Before the implementation of any major change in business operation that might affect employee rights, an appropriate notification will be made in accordance with all the relevant laws and regulations. There has been no major change in business operation that might have affected employee rights during this report period.

The OUCC Union

The OUCC Union was established in 1988 to protect the interests of members, to increase their knowledge and skills, and promote the manufacturing business for the purpose of improving members working conditions and lives. Union members constitute 68.83% of the employees.

To defend the interest of occupational safety and health, 42% of the membership of the health & safety committee are labor representatives. Besides, all health and safety issues are regulated by the "Occupational Safety & Health Committee."

The percentage of the health and safety issues reached in the official agreement signed with the Union

2013	2014	2015	2016
10.42	10.42	10.42	10.42



Human Rights Protection and Appeal Mechanism

The OUCC abides strictly by the rules for gender equality as set out in the "Act of Gender Equality in Employment," and the "Prevention of Sexual Harassment," and has established a "Sexual Harassment Complaint Handling Mechanism" to prevent workplace violation and sexual harassment. OUCC is vigorous in its advocacy and promotion of the anti-gender discrimination policies and acts.

The risk of the OUCC operation violating human rights is not high. Although there is no minimum period of time defined for reporting any major changes in business operation, there are many effective channels by which employees may be informed about such changes. Employees are encouraged to question any changes made to their job responsibilities.

In order to assist employee to have better understanding about human right, the document system is explained and made available to employees in new employee education and training course. The relevant human rights trainings 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."

The OUCC treats all their employees fairly and complies strictly with all the relevant labor laws and human rights regulations. The OUCC applies the "Rules Governing Employee Grievance" in response to any human rights issues. A contractor grievance window is anticipated to be established to provide a smooth channel for employee grievances to be dealt with by the relevant facilities. There were no complaints about human rights in 2016. Related measures are implemented including:

- 1. Regulate labor conditions and relevant regulations in accordance with government labor related laws and regulations.
- 2. Provide open, fair, and impartial job opportunities to all applicants in accordance with the "Employment Service Act."
- 3. Abide strictly by the "Rules Governing Employee Grievance" and establish a smooth grievance channel.
- 4. The "Human Resource Evaluation Committee" has been established to administer the "Rules Governing Human Resource Evaluation" and matters that involve commendation or disciplinary action will be discussed and decided by the department heads with a final decision approved by the President in accordance with the "Work Rules."
- 5. The "Act of Gender Equality in Employment and Sexual Harassment Prevention, Grievance, and Discipline" is stipulated to protect employee rights to work and maintain gender equality in employment. The real promotion of the spirit of gender equality must abide and a sexual harassment-free working environment must prevail. All the appropriate preventive, corrective, and disciplinary action against sexual harassment must be present and all employees must have unimpeded access to a clear grievance channel to ensure their best interests.
- 6. The "Rules Governing Personal Information" have been clearly set down for the preservation of confidentiality and the management of personal information, and also to ensure the safety and legality of the OUCC collection, processing, usage, and international transmission of personal information.
- 7. The company will establish a Contractors grievance window on the website to provide a smooth channel for their complaints.

CUSTOMERS

The OUCC upholds the values of "sincerity, diligence, thrift, prudence, and innovation" to maintain a stable and good relationship with their customers. Customer opinion is highly valued and regular customer satisfaction surveys are carried out. For a contract review or change, the related product must be presented in advance to ensure that the company can actually meet the customer's requirements.

Customer Privacy Protection

The OUCC assumes responsibility for the protection of customer privacy. All the customers' intellectual property rights are held in the strictest confidence to ensure customer product competitiveness.

Customer Satisfaction Management

In order to ensure product quality relevance, sufficiency, and effectiveness, the OUCC convenes a quality management meeting every six months to review the quality of management, to consider customer feedback, the quality objective process performance, product compliance, the internal and external audits and nonconformity correction, resource status and demand, and the follow-up quality corrective and preventive actions for review and resolution by the Audit Committee.

In the event of a customer complaint, a reply must be made to the customer within three working days. The content of the complaint and any loss to the customer must be accurately documented, the root cause analyzed, and corrective or preventive action or continuous improvement must be implemented. The OUCC uses the following procedures to maintain a good customer relationship:

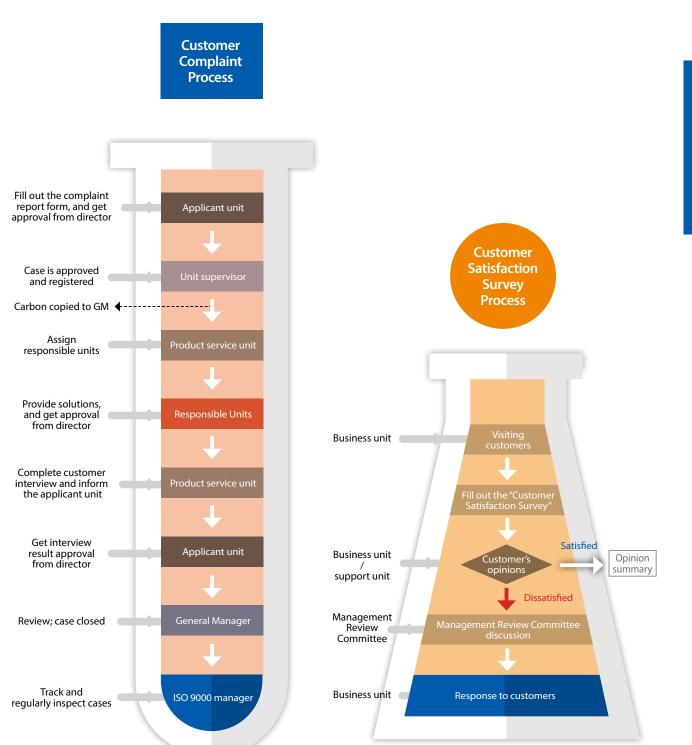
- 1. Occasional customer visits
- 2. An annual customer satisfaction survey
- 3. Occasional distributor meeting (sales)

A business unit receiving a customer complaint should respond immediately and complete a "Customer Complaint Handling Form" with the complete details and date of occurrence, name, tanker number, and delivery number.

The 2016 EG/EO Customer Satisfaction Survey attained a score of 33.5 points out of perfect score of 35 points, and the survey content including: Service, delivery, quantity, accuracy, quality, packaging, transport and overall satisfaction, and so on. Under the effective quality management by OUCC, customer satisfaction has improved annually during the last three years.

2014-2016 Customer Satisfaction Survey

	2014	2015	2016
Average score (out of 35 points)	32.3	32.4	33.5



SUPPLIERS

The success of the OUCC business operations relies on a considerable extent on the support of the suppliers, with whose involvement the Company is able to maintain sustainable development as well as the continuous trust of the community and our stakeholders.

As high as the CSR awareness of today, our challenges, in addition to continuing to optimize supplier management processes, are to meet the demands of our customers and supply them with quality products. We also have to ensure that our suppliers treatment to their labor, behavior towards the environment, and business integrity meets the expectations of society through our supplier screening mechanism.

Contractor Management

The OUCC has internal "Rules Governing Suppliers". The OUCC believes that the company should provide a safe working environment for employees, work together with the suppliers to fulfill corporate social responsibility, and establish a higher environmental protection, safety, and health standard for the industry taken as a whole.

We take the initiative with our suppliers with respect to environmental matters, as well as safety and health issues. We also encourage them to enhance their management in breadth and depth. We have provided grants in accordance with the internal management approach of a company in the hopes of integrating all the supply chain partners in the fulfillment of corporate social responsibility. We work closely with our suppliers to strengthen these partnerships and have started with social welfare and participation in social activities.

The OUCC is very conscious of the danger of disaster. To instill an appreciation of this ever existing hazard the company has prepared the "Contractor Work Safety Rules" for contractors carrying out construction or repair & maintenance on the plant premises. It is a must that all the contractors' workers have the necessary work safety licenses and certificates and are qualified to carry out the work they are assigned. Contractors are also required to sign the "Contractor's Operation Safety Commitment to the OUCC while Working in the Plant" indicating their full understanding of the rules for working on the OUCC plant premises.

Screening and Evaluation

To strengthen the awareness and execution of corporate social responsibility in the suppliers, we have worked closely with them, and with our contractors, on five matters: labor, health & safety, environment, management, and business ethics.

Suppliers must comply with the petrochemical industry code of conduct and the OUCC "Environmental Safety and Health Policy." The OUCC uses a supplier self-evaluation process with a questionnaire to help them understand the meaning and requirements of the policy. Suppliers and contractors sign a Letter of Commitment to guarantee compliance with environmental safety and health. The OUCC supplier screening and evaluation mechanism and result include:

- 1. New suppliers must pass a Supplier Evaluation.
- 2. Existing suppliers must receive and complete an annual evaluation (on-site or written evaluation). In 2016, there was a total of 632 trading suppliers written evaluations; 1 supplier disqualified.

Contractor Safety Conference

Organize the Contractor Safety Conference regularly to conduct two-way communication on safety matters through the meeting. Firstly, the OUCC internal units will conduct announcement such as: factory regulations, environmental safety operations focus, etc., then conduct co-experience sharing of the OUCC supervision and contractor management, and finally provide temporary motions to submit the discovered problems and review followed by improvements to ensure the safety of the workplace. In the 2016 Safety Conference, the matters promoted and announced by the Environmental Safety unit were:

- 1. Make sure to conduct safety check in hot work operation.
- 2. Make sure to conduct safety check by the work safety personnel.
- 3. Promote the legal license and management matters required for each type of work.
- 4. Monthly Contractor Safety Meeting, Supervision and Contractor Safety Reporting Schedule.

Transportation Supplier's Safety and Health Quality Audit

As an enterprise committed to substantiating responsibility, the OUCC is doing everything possible to realize the goal of transport safety. Contracted transport service providers must participate in the Kaohsiung City – Kaohsiung County - Pingtung County diesel self-management program and receive their qualification mark, and comply with the environmental and safety standards requirements. A regular "Outsourcing Transportation Safety and Health Quality Audit and Survey" is performed in the fourth quarter for all the main transport service providers. Annual accident statistics accounted for 50% of the score, while transportation safety and hygiene quality audit accounted for another 50%. The transport service provider will not be renewed if the evaluation score is below the standard score.

The total number of evaluation audit on transport is eight in 2016 with the passing rate of 100%. The items audited include:

- 1. Transport Company Profile and transport policy.
- 3. Work procedures and emergency response.
- 5. Driver qualification review (evaluation).
- 2. Security System and policy.
- 4. Driver qualification (employment / training).
- 6. Equipment safety.

In response to CSR management trend, contracted tanker or transport companies will be requested to follow environmental safety and other health-related matters mentioned in their contracts. They must pass 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.

- 3. The evaluation process includes record evaluation and field evaluation. The items include company management, quality, delivery, price, service, and environmental safety. Only when the suppliers' rating score reaches standard requirement could the suppliers be listed as qualified
- 4. Forwarders evaluation system: Ten 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 2016. Currently, there are seven outsourced tanker forwarders, all have ISO 9001 certification (100% pass rate); three of these have ISO 14001 certification, (42.9% pass rate, accounting for 79.3% of freight delivery); and five have OHSAS 18001 certification (71.4% pass rate, accounting for 98.9% of freight delivery).

Note: The OUCC has 3-in-1 ISO certifications, which means a declaration of compliance with environmental policies and an environmental impact assessment must be sealed, signed and returned to the Company by the suppliers.

COMMUNITY



The OUCC applies their corporate spirit of "taking from society, giving back to society" to sponsor charity groups or to engage in activities of the affiliated charitable foundation of the company, of which sponsorship is subject to the Company's yearly operating performance. We also engage in feedback to the community and collaborate with suppliers to maintain our partnerships. Suppliers and employees are also invited to participate in social welfare activities with the support of enterprises.

The OUCC has occasionally arranged blood donation drives, held along with FE Group other donation activities such as the Taipei Expo, August 8th hurricane donations, 921 earthquake donations; and spontaneous employee donations to disadvantaged groups and volunteer work. The amount donated to disadvantaged minority and charity groups in 2016 totaled NTD 2.49 million, including over NTD 1.43 million for community sponsorship. Relevant details may be referred on P.101.

Invested amount (NT\$ Thousand)	
48	PAR
269	TNE
178	SUSTAINABLE PARTNERSHIP
	-

Activities	Briefing	Invested amount (NT\$ Thousand)	
Temple festival	Jing Xin Temple, Sie Tian Temple, ChengHuang Temple, etc.	48	
Heads of boroughs & neighborhoods gathering activities	SiJhou Village, Wufu Village, JhongYun Village, etc.	269	
Clubs and association activities	Linyuan Village Promotion Association, SiJhou Community Development Association, Linyuan Environmental Protection Association, etc.	178	
Work with the industry in Linyuan to sponsor the Linyuan District Office for community activities, such as scholarships, emergency assistance, reconstruction of public space, and the training of environmental volunteers.	Linyuan Petrochemical Industrial Park Manufacturers Meeting, Kaohsiung Petrochemical Industry Trade Union, Linyuan District Office, etc.	936	
	Linyuan Precinct	19	
Friends of the Police Association –	Linyuan Police Station	19	
2016 Summit Forum	Taiwan Chemical Industry Association	30	
Taipei Expo Park EcoARK	Water Exhibition - Taiwan Water, Foundation of Life Activity	1,000	
Summary		2,499	

Donation

	Unit	2013	2014	2015	2016
Cash donation amount	NT\$ thousand	1,648	3,793	1,413	2,499
In-kind donation amount	NT\$ thousand	13	28	10	0
Total	NT\$ thousand	1,661	3,821	1,423	2,499

Dengue Smoke Agent (Ethylene Glycol) Donated

	2013	2014	2015
Donation volume	500kg	1,000kg	500kg
Donation recipient	Fengshan District Office	Linyuan and Fengshan District Office	Fengshan District Office



ASSOCIATION MEMBERSHIP LIST

We keep 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, we make serious effort to understand and respond immediately to the suggestions of external stakeholders with respect to the industry and the sustainable development of OUCC by participation in all the discussions of industry-related issues.



Due to the huge impact of the chemical industry on the livelihood of people and the community, in addition to involvement in public policy debates, the OUCC has become a member of the TRCA, signed the Responsibility Care[®] Global Charter, committed to improve the quality of life and promote sustainable development initiatives. We take an active part in training, discussions and providing advice on industrial safety standards from actual work safety experience.

Association and union name	Admission Status	Membership
Association and union name	(Group, individual)	(General member, Director, Supervisor)
Petrochemical Industry Association of Taiwan (PIAT)	Group	Member
Taiwan Chemical Industry Association (TCIA)	Group	Director, member
Taiwan Responsible Care Association (TRCA)	Group	Supervisor, member
Taiwan Institute of Chemical Engineers	Group	Member
Taiwan Industry Gas Association (TIGA)	Group	Director, member
Industrial Gas Association of ROC	Group	Director, member
Specialty Chemical Development Association of ROC	Group	Director, member
The Institute of Internal Audit, ROC (Taiwan)	Group	Member
Industrial Safety and Health Association (ISHA) of the ROC (Taiwan)	Group	Member
Kaohsiung Commerce and Trade Development Association	Group	Member
Kaohsiung Personnel Representative Association	Group	Member
Kaohsiung County Industrial	Group	Member
Chinese Arbitration Association, Taipei.	Group	Member
Chinese National Association of Industry and Commerce, Taiwan (CNAIC)	Group	Member



ASSURANCE STATEMENT



ASSURANCE STATEMENT

SGS TAIWAN LTD.'S INDEPENDENT ASSURANCE REPORT ON SUSTAINABILITY ACTIVITIES IN THE Oriental Union Chemical Corporation's CORPORATE SOCIAL RESPONSIBLE REPORT FOR 2016

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 Responsible Report (hereinafter referred to as CSR Report) of 2016. The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the text, and data in accompanying tables contained in this report.

The information in the OUCC's CSR Report of 2016 and its presentation are the responsibility of the superintendents, CSR committee and the management of OUCC. SGS has not been involved in the preparation of any of the material included in the OUCC's CSR Report of 2016.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of assurance set out below with the intention to inform all OUCC's stakeholders.

The SGS Group has developed a set of protocols for the Assurance of Sustainability Reports based on current best practice guidance provided in the Global Reporting Initiative (hereinafter referred to as GRI) Sustainability Reporting Guidelines and the AA1000 Assurance Standard (2008). These protocols follow differing options for Assurance depending the reporting history and capabilities of the Reporting Organization.

This report has been assured using our protocols for:

- evaluation of content veracity at a moderate level of scrutiny for OUCC and moderate level of scrutiny for subsidiaries and applicable aspect boundaries outside of the organization covered by this report;;
- AA1000 Assurance Standard (2008) Type 1 evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2008); and
- evaluation of the report against the Global Reporting Initiative Sustainability Reporting Guidelines (G4 2013).

The assurance comprised a combination of pre-assurance research; interviews with relevant employees, superintendents, CSR committee members and the management in Taiwan; documentation and record review and validation with external bodies and/or stakeholders where relevant. Financial data drawn directly from independently audited financial accounts 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 affirms 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, EICC, QMS,

EMS, SMS, GPMS, CFP, WFP, GHG Verification and GHG Validation Lead Auditors and experience on the SRA Assurance service provisions.

VERIFICATION/ ASSURANCE OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within OUCC's CSR Report of 2016 verified is accurate, reliable and provides a fair and balanced representation of OUCC sustainability activities in 01/01/2016 to 12/31/2016.

The assurance team is of the opinion that the Report can be used by the Reporting Organisation's Stakeholders. We believe that the organisation has chosen an appropriate level of assurance for this stage in their reporting. In our opinion, the contents of the report meet the requirements of GRI G4 Core Option and AA1000 Assurance Standard (2008) Type 1, Moderate level assurance.

AA1000 ACCOUNTABILITY PRINCIPLES CONCULSIONS, FINDINGS AND RECOMMENDATIONS Inclusivity

OUCC is committed to being accountable to its stakeholders and to integrating inclusivity into its strategic and management approach. A variety of engagement efforts such as survey and communication to employees, customers, investors, local communities, suppliers and other stakeholders are implemented to underpin the organization's understanding of stakeholder concerns. For future reporting, OUCC may proactively consider having more direct 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. It is recommended that the process and criteria applied to assess materiality to be formalized and documented to ensure better consistent result in future reporting.

Responsiveness

The report includes coverage given to stakeholder engagement and channels for stakeholder feedback. Future reporting would benefit from more reporting on the results of stakeholder feedback from this report.

GLOBAL REPORTING INITIATIVE REPORTING GUIDELINES CONCULSIONS, FINDINGS AND RECOMMENDATIONS

The report, OUCC's CSR Report of 2016, is adequately in line with the GRI G4 Core Option. The material aspects 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 aspects and boundaries, and stakeholder engagement, G4-17 to G4-27, are correctly located in content index and report. More engagement to involve NGOs or CSR experts and scholars for considering the full picture of OUCC's significant outward impacts on the economy, the environment, and society is encouraged in future reporting.

Signed: For and on behalf of SGS Taiwan Ltd.

David Huang, Director Taipei, Taiwan 19 June, 2017 WWW.SGS.COM



GRI Index

GENERAL STANDARD DISCLOSURES

Indicator	Disclosure Item	Page Number and Explanation	External Assurance
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G4-2	Provide a description of key impacts, risks, and opportunities	6, 31-32	P.104-105
	ORGANIZATIONAL PROFILE		
G4-3	Report the name of the organization	2	P.104-105
G4-4	Report the primary brands, products, and services	6-9	P.104-105
G4-5	Report the location of the organization's headquarters	10	P.104-105
G4-6	Report the number of countries where the organization operates, and names of countries where either the organization has significant operations	10	P.104-105
G4-7	Report the nature of ownership and legal form	2	P.104-105
G4-8	Report the markets served	12	P.104-105
G4-9	Report the scale of the organization	10	P.104-105
G4-10	Report the total number of employees	83	P.104-105
G4-11	Report the percentage of total employees covered by collective bargaining agreements	94	P.104-105
G4-12	Describe the organization's supply chain	13	P.104-105
G4-13	Report any significant changes during the reporting period	2	P.104-105
G4-14	Report whether and how the precautionary approach or principle is addressed	31-32	P.104-105
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses	51, 99	P.104-105
G4-16	List memberships of associations and national or international advocacy organizations	102	P.104-105
	IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES	5	
G4-17	List all entities included in the organization's consolidated financial statements or equivalent documents	2	P.104-105
G4-18	Explain the process for defining the report content and the Aspect Boundaries	38-41	P.104-105
G4-19	List all the material Aspects identified in the process for defining report content	38-41	P.104-105
G4-20	For each material Aspect, report the Aspect Boundary within the organization	38-41	P.104-105
G4-21	For each material Aspect, report the Aspect Boundary outside the organization	38-41	P.104-105
G4-22	Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements	No restatements	P.104-105
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries	No significant changes	P.104-105
	STAKEHOLDER ENGAGEMENT		
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G4-25	Report the basis for identification and selection of stakeholders with whom to engage	39	P.104-105

Indicator	Disclosure Item	Page Number and Explanation	External Assurance
G4-26	Report the organization's approach to stakeholder engagement	39	P.104-105
G4-27	Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting	39-41	P.104-105
	REPORT PROFILE		
G4-28	Reporting period for information provided	2	P.104-105
G4-29	Date of most recent previous report	2	P.104-105
G4-30	Reporting cycle	Annual	P.104-105
G4-31	Provide the contact point for questions regarding the report or its contents	2	P.104-105
G4-32	Report the 'in accordance' option the organization has chosen	2	P.104-105
G4-33	Report the organization's policy and current practice with regard to seeking external assurance for the report	2	P.104-105
	GOVERNANCE		
G4-34	Report the governance structure of the organization	Please refer to OUCC 2016 annual report, page 28	P.104-105
G4-35	Report the process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees	38	P.104-105
G4-36	Report whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body	38	P.104-105
G4-37	Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics	38	P.104-105
G4-38	Report the composition of the highest governance body and its committees	30	P.104-105
G4-39	Report whether the Chair of the highest governance body is also an executive officer	No	P.104-105
G4-41	Report processes for the highest governance body to ensure conflicts of interest are avoided and managed. Report whether conflicts of interest are disclosed to stakeholders	27	P.104-105
G4-43	Report the measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics	30-32	P.104-105
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G4-57	Report the internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity	27	P.104-105
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SPECIFIC STANDARD DISCLOSURES

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G4-EN22 Total water discharge by quality and destination 78 P.104-105	MATERIAL A	SPECT: EFFLUENTS AND WASTE		
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G4-EN23 Total weight of waste by type and disposal methods 61 P.104-105	G4-EN22	Total water discharge by quality and destination	78	P.104-105
	G4-EN23	Total weight of waste by type and disposal methods	61	P.104-105

Indicator	Disclosure Item	Page Number and Explanation	External Assurance
G4-EN24	Total number and volume of significant spills	None	
MATERIAL A	SPECT: PRODUCTS AND SERVICES		
G4-DMA		44-45	P.104-105
G4-EN27	Extent of impact mitigation of environmental impacts of products and services	46	P.104-105
MATERIAL A	SPECT: COMPLIANCE		
G4-DMA		45	P.104-105
G4-EN29	Monetary value of significant fines and total number of significant fines and total number of non-monetary sanctions for non-monetary for non-compliance with environmental laws and regulations	62	P.104-105
MATERIAL A	SPECT: TRANSPORT		
G4-DMA		48-49	P.104-105
G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operation, and transporting members of the workforce	49, 76-77	P.104-105
MATERIAL A	SPECT: OVERALL		
G4-DMA		62	P.104-105
G4-EN31	Total environmental protection expenditures and investments by type	62	P.104-105
MATERIAL A	SPECT: ENVIRONMENTAL GRIEVANCE MECHANISMS		
G4-DMA		61	P.104-105
G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	61	P.104-105
	CATEGORY: SOCIAL		
	SUB-CATEGORY: LABOR PRACTICES AND DECENT WC	PRK	
MATERIAL A	SPECT: EMPLOYMENT		
G4-DMA		82	P.104-105
G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender and region	83-86	P.104-105
G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part time employees, by significant locations of operation	88-91	P.104-105
MATERIAL A	SPECT: LABOR/MANAGEMENT RELATIONS		
G4-DMA		94	P.104-105
G4-LA4	Minimum notice periods regarding operational changes	94	P.104-105
MATERIAL A	SPECT: OCCUPATIONAL HEALTH AND SAFETY		
G4-DMA		48-49	P.104-105
G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety program	50-51, 93	P.104-105

Indicator	Disclosure Item	Page Number and Explanation	External Assurance
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	56	P.104-105
G4-LA8	Health and safety topics covered in formal agreements with trade unions	94	P.104-105
	SUB-CATEGORY: HUMAN RIGHTS		
MATERIAL A	ASPECT: FORCED OR COMPULSORY LABOR		
G4-DMA		82	P.104-105
G4-HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	None	P.104-105
MATERIAL A	SPECT: HUMAN RIGHTS GRIEVANCE MECHANISMS		
G4-DMA		95	P.104-105
G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	95	P.104-105
	SUB-CATEGORY: SOCIETY		
MATERIAL A	SPECT: COMPLIANCE		
G4-DMA		26	P.104-105
G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	None	P.104-105
	SUB-CATEGORY: PRODUCT RESPONSIBILITY		
MATERIAL A	ASPECT: CUSTOMER HEALTH AND SAFETY		
G4-DMA		44-45	P.104-105
G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes	None	P.104-105
MATERIAL A	SPECT: PRODUCT AND SERVICE LABELING		
G4-DMA		44-45	P.104-105
G4-PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements	100%	P.104-105
G4-PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	None	P.104-105
G4-PR5	Results of surveys measuring customer satisfaction	96	P.104-105

