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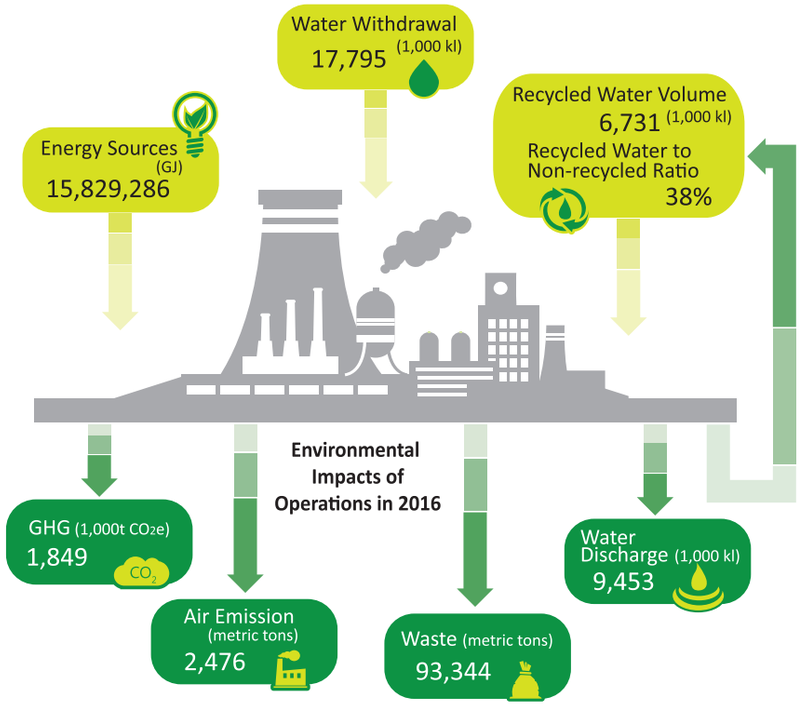
3.1 An Overview of Key Data

Resources Used for Operation in 2016



Note: For detailed data, please refer to description of this chapter.

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3.2 Energy and Resources Management

3.2.1 Energy Management

Among the 17 SDGs outlined by UN, the SDG13-Climate Action specifies that related measures should be taken to cope with global and entrepreneurial sustainability risk due to climate change. FENC therefore takes energy issues within corporate seriously. It not only proactively responds to government's energy policies, but also continues to promote measures for energy conservation and carbon reduction to improve efficiency of energy consumption. By lowering energy consumption step by step, it aims to mitigate global climate change.

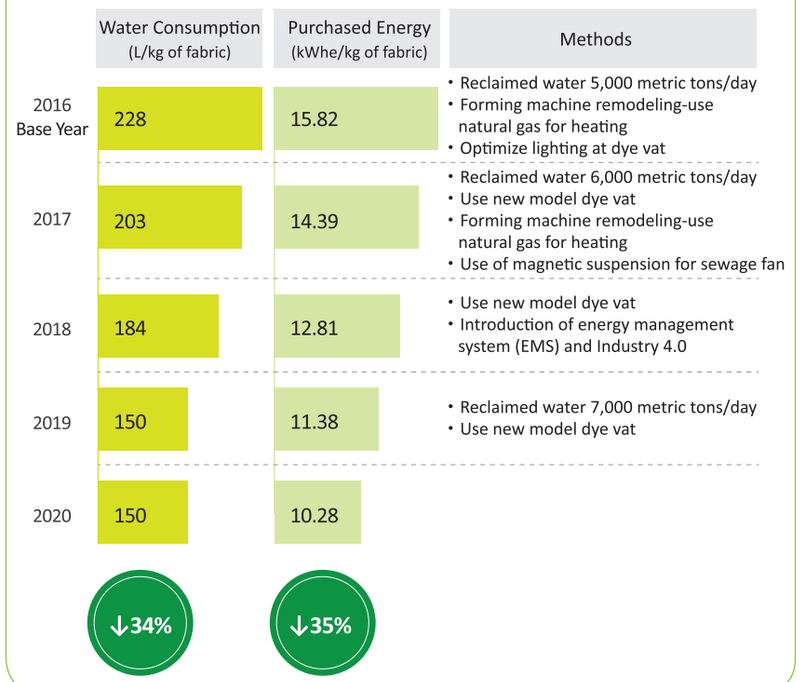
Energy management methods at production sites

- Designate a unit responsible for energy management and hold meetings regularly for follow up and review.
- Establish energy management related systems and set energy conservation goals.
- Establish plan and procedure for energy conservation and submit the related cases and measures to government.
- Follow up on energy conservation project results and include performance as criteria for reward and compensation.
- Promote energy management related certification.
- Enhance promotion of energy conservation awareness through means such as circulation of energy conservation publications and sharing of case studies.

The power consumption is reduced by 2.3% in 2015 and 2.9% in 2016 at Taiwan production sites. This progress is ahead of the government's power conservation goal of 5% in five years. The Polyester Business reorganized its structure to accommodate Taiwan's energy policy in October 2016. Task force teams were established, they are in charge of production procedure, water resources management, power management and recycling, each team is organized with specific duties. Each team will recruit members according to its duties and report the project status to the master window of the project. The discussion on present situation and possible bottlenecks can help to elevate the management capability.

Five Year Energy Conservation Plan for Far Eastern Dying & Fishing (Suzhou) Ltd.

The major product of Far Eastern Dyeing & Finishing (Suzhou) Ltd. is textile dyeing and processing. In order to fulfill the goal of corporate sustainability and environmental protection, after reviewing its production operation and taking feasibility into consideration, it strikes out a 5-year energy conservation plan since 2016, with water and energy conservation in dyeing procedure as its major 2 targets. By 2020, the water consumption per kilogram of fabric is set to be 34% less than in 2016 base year (from June 2015 to May 2016). The purchased energy is set to be 35% less. The following is the annual goal and the plan to reach the goal:



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Environmental and Energy Management Certification Passed at Production Sites

Certification Standards	Sites with Certifications
ISO 14001 Environmental Management Systems	Hsinpu Chemical Fiber Plant, Kuanyin Chemical Fiber Plant, Kuanyin Dyeing and Finishing Plant, Oriental Petrochemical (Shanghai) Corp., Far Eastern Industries (Shanghai) Ltd., Wuhan Far Eastern New Material Ltd., Oriental Industries (Suzhou) Ltd., Far Eastern Dyeing & Finishing (Suzhou) Ltd., Far Eastern Apparel (Vietnam) Ltd., Headquarters
ISO 50001 Energy Management Systems	Hukou Mill, Far Eastern Industries (Wuxi) Ltd., Headquarters

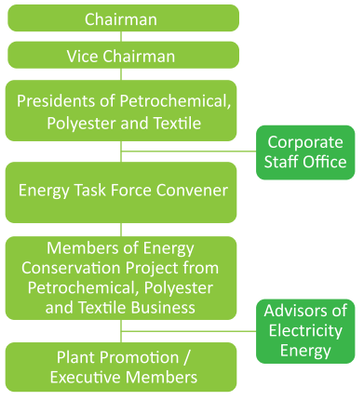
Energy Task Force

FENC established the intercompany and interdepartmental "Energy Task Force" in 2010, which convenes periodically to review and examine energy consumption status and formulate energy conservation implementation plans and track the results of energy conservation projects. Furthermore, the Energy Task Force also organizes technical exchange meetings to explore energy conservation opportunities and introduce energy-saving technology in order to achieve energy conservation objectives. At each production site, FENC formulates related guidelines and regulations in accordance to the policies devised by the Task Force to ensure execution and provide related detailed information for the Task Force to conduct assessment on related projects.

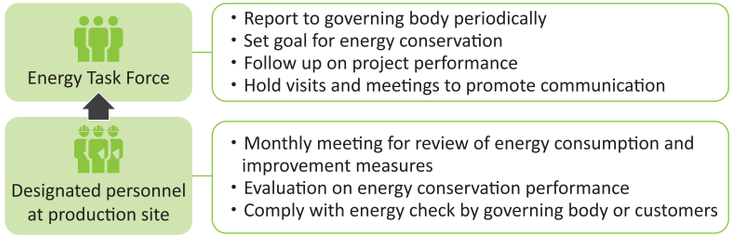
Major Duties of Energy Task Force

- Energy management
- Water resources management
- Recycle and reuse of waste material
- Energy conservation for production procedure
- Follow up on major energy conservation project- Renewable energy solar power project and coal water mixture boiler project
- Online smart energy data analysis system

Organization Structure of Energy Task Force

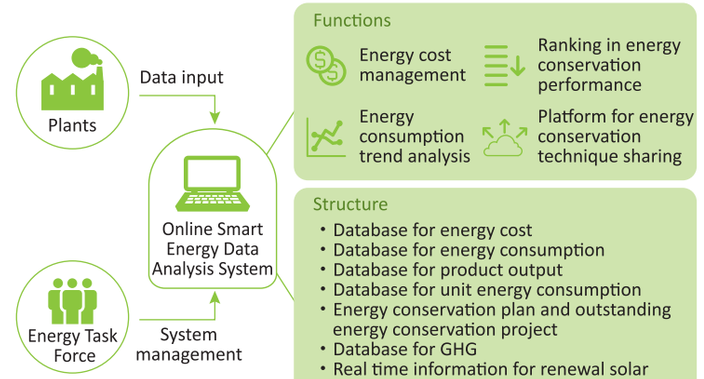


Responsibilities of Energy Task Force



Online Smart Energy Data Analysis System

Online Smart Energy Data Analysis System was officially in effect in July 2016. The system can distribute energy data statistics to each production line which enables governing body to strike out managing policy accordingly. In order to familiarize the designated personnel with system operation, the Energy Task Force held 3 sessions of education training in 2 days in Oriental Petrochemical (Taiwan) Co., Ltd., Headquarters in Suzhou and Hsinpu Chemical Fiber Plant respectively.



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Energy Task Force organized Cross-Strait Energy Conservation Technical Conference which invited experts in the industry to share on related experiences and the latest trend in the field. Besides, Energy Task Force has promoted the online smart data analysis system project to precisely control energy data and to be able to penetrate into the core of energy management.

In 2017, the Energy Task Force will launch a talent pool system for power energy management to muster a group of power conservation experts who will visit all sites regularly to evaluate power consumption and provide knowledge on power conservation and enhance production units' power usage and related knowledge.

Organized Cross-strait Energy Conservation Technical Conference and Invited External Experts for Speech

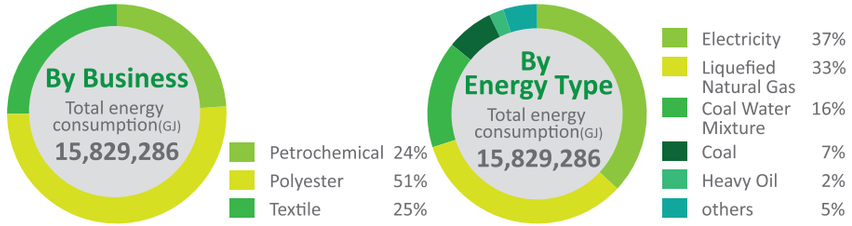
FENC has been engaging in energy conservation for years and has been aware of the bottleneck in developing technology for energy conservation and application. Therefore, each year the Company will organize a related conference for exchange of ideas and developing new area in energy conservation. "Far Eastern Cross-strait Energy Conservation Technical Conference" was held from May 10 to 19, and June 23 to July 1, 2016.

Major areas of exchange of ideas:

- Energy consumption and achievements of energy conservation at each unit
- Status of implementation of 2016 energy conservation projects
- Technical exchange on innovative or outstanding energy conservation projects
- Technical exchange on energy conservation facilities and systems
- Progress of implementation of projects (e.g.: cogeneration, coal-water mixture boiler and solar PV power stations).
- Experience sharing on facility operation
- Onsite inspection of major energy-consuming facilities
- Global energy issues and discussion on energy policies of local governments

The Energy Task Force also invited experts from ITRI to give keynote speeches at the Conference. Speech topics are "Sharing of Successful Energy Conservation Cases and Research on Energy Visualization Technology", "Smart Energy-saving Solution and Case Sharing", "Exploration of Power Demand Reaction", hoping that employees could gain more knowledge on energy conservation. Besides, in response to "Paris Agreement" passed in COP21, all units have managed to exchanged ideas on "methods and ideas on GHG reduction" at the conference, demonstrating how much we care about climate change.

Energy Consumption in 2016



Energy Consumption

Unit: GJ

Energy Type	Petrochemical		Polyester		Textiles		Total	
	2015	2016	2015	2016	2015	2016	2015	2016
Purchased Power	885,017	1,005,486	2,754,247	2,839,321	1,953,162	2,028,228	5,592,426	5,873,035
Purchased Green Power	0	360	540	540	180	180	720	1,080
Self-generated Green Power	0	0	0	1,005	0	6,013	0	7,018
Electricity	**885,017**	**1,005,846**	**2,840,866**	**2,839,861**	**1,953,342**	**2,034,421**	**5,593,146**	**5,881,133**
Liquefied Natural Gas	876,487	2,769,839	31,286	1,255,296	1,045,616	1,157,987	1,953,389	5,183,123
Heavy Oil	0	0	309,019	249,954	58,053	44,348	367,072	294,302
Coal	0	0	1,009,054	1,048,184	49,237	91,435	1,058,292	1,139,620
Coal Water Mixture	1,458,945	62,876	3,746,151	2,388,625	157,521	104,052	5,362,617	2,555,553
Ethylene Tar	631,420	437	0	0	0	0	631,420	437
Purchased Steam	0	0	240,244	330,852	401,793	444,266	642,037	775,118
Total	**3,851,869**	**3,838,999**	**8,090,541**	**8,113,777**	**3,665,562**	**3,876,509**	**15,607,972**	**15,829,286**

Note:

1. Above figures are energy consumption for production procedure.
2. Heating value is based on heating value coefficient at each production site.
3. Energy consumption outside of the organization is not included.

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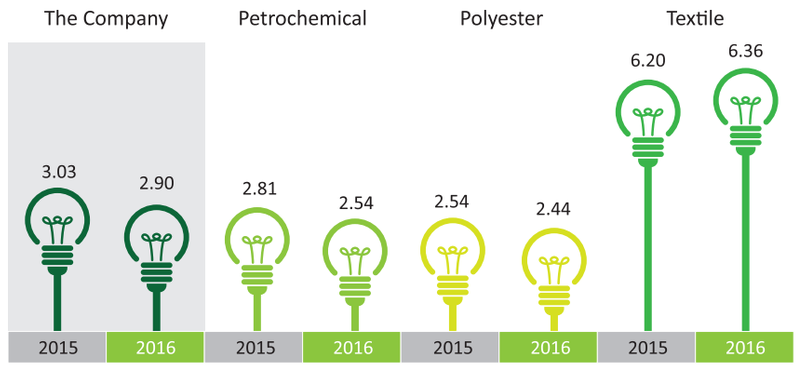
Energy Intensity Unit: GJ/metric ton of product



Note: The Textile Business does not include Far Eastern Apparel (Suzhou) Co., Ltd. and Far Eastern Apparel (Vietnam) Ltd.

Energy intensity for FENC dropped in 2016, indicating increase of energy efficiency. Total energy consumption of FENC in 2016 was equivalent to that of 2015. The main energy consumed was electrical power, with LNG comes second for replacing coal water mixture (CWM) as boiler use of LNG instead of CWM at some production sites. In compliance with China's environmental protection policy, Oriental Petrochemical (Shanghai) Corp. has ceased to use Ethylene tar since February 2016.

Smart Power Management System at Hsinpu Chemical Fiber Plant

Hsinpu Chemical Fiber Plant introduced smart power management system in 2015 and installed 195 digital power meters to effectively monitor power consumption at all production sites. By signing contract with each power consuming unit to introduce 3-phased pricing methods, it seeks to induce power conservation at production unit to lower cost for power and respond to government policy of emission reduction and energy conservation. This system is officially launched in September 2016. The plant intends to expand the system's function to increase power safety and integrate power usage information to enter next stage of smart power management in the future.

Main Functions

Automatic Meter Reading	Monitoring Power Quality	Facility Status Monitoring	Monitoring and Recording of Power Consumption	Power Demand Monitoring, Measuring, and Control

Benefits

Power Conservation	• Power demand and schedule control, over contracted volume alert, saves cost of energy and reduces the likelihood of exceeding contracted capacity • Introduction of 3-phased pricing methods, reasonably reflect power cost of all units and increase incentive to conserve power and lower cost of production
Management	• Through automated data collection of power monitoring, the system lowers human mistakes and increases data accuracy and at the same time lowers labor cost • Complete and real-time record on power consumption, provides basis for power management and decision-making and in control of power supply quality and safety • Maintenance unit can control equipment operation by monitoring abnormal power usage and lower malfunction rate • Understand power efficiency of equipment and use the data as basis for replacement

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Measures and Performances of Energy Conservation and Carbon Reduction

FENC continues to implement measures to conserve energy and reduce carbon emission. There were 133 related projects in 2016, mostly were about facility improvement in order to conserve energy.

Energy Conservation and Carbon Reduction Projects in 2016

Manufacturing Process Improvement	31	Change of production parameters, such as temperature, pressure, and operation time
Facility Improvement	79	Optimization, upgrade and replacement of air conditioning (AC), air compressor, boiler, power generator, lighting equipment and production procedure equipment, for example, frequency conversion, use of temperature-control devices and light-weighted equipment
Energy Management	23	Optimization of lighting, improvement of preheating system, combination of dust collection and air ventilation

Performance of Energy Conservation and Carbon Reduction Projects

Item	2014	2015	2016
Investments Amount (NT$ 1,000)	835,690	311,165	384,486
Energy Conservation (NT$ 1,000)	336,452	189,258	156,618
Energy Savings (GJ)	601,494	608,400	1,192,761
GHG Avoidance(t-CO_2e)	55,089	74,022	166,252

Performance of Energy Conservation and Carbon Reduction Projects in 2016

Type of Measures	Energy Saved (GJ)	GHG Avoidance(t-CO_2e)	
		Scope 1	Scope 2
Manufacturing Process Improvement	607,520	22,441	57,562
Facility Improvement	461,179	3,669	64,027
Energy Management	124,062	0	18,553
Total	**1,192,761**	**166,252**	

Measures by Business	Energy Saved(GJ)	GHG Avoidance(t-CO_2e)	
		Scope1	Scope2
Petrochemical	74,365	0	14,465
Polyester	994,115	22,716	111,089
Textile	124,282	3,393	14,588
Total	**1,192,761**	**166,252**	

Note:
1. The energy saved is calculated by comparing to energy consumptions of original facilities and production process prior to the execution of the projects.
2. Far Eastern Apparel (Vietnam) Ltd. was included in 2016 Energy Conservation and Carbon Reduction Projects.
3. Heating value is based on heating value coefficient of each production site.
4. GHG Emission Coefficient: for Taiwan, is based on "GHG Emission Coefficient Management Chart" version 6.0.2 published by Bureau of Energy, MOEA, and EPA. Steam emission coefficient is 0.1518t-CO_2e/t; Electricity GHG Emission Coefficient for Mainland China is based on local electricity network, other emission coefficients are calculated based on "General Principles for Calculation and Report (trial) of GHG Emission by China Chemical Production." Electricity GHG Emission Coefficient for Vietnam is calculated based on 0.57t-CO_2e/t.
5. Scope 1 Emissions include heavy oil, natural gas and CWM. Scope 2 emissions include purchased electricity and steam.

Oriental Petrochemical (Taiwan) Co., Ltd. Cooling Water Diverge

After reviewing cooling water pipes, Oriental Petrochemical (Taiwan) Co., Ltd. found that there was room for cooling water pressure adjustment and also for the distance of pipe transportation and for production procedure. It has started to use both high and low pressure for water pressure to replace the previous 3 high power (1,090kW) water pumps in parallel operation and transport cooling water via single discharge pressure. This could save 7.44 million voltages annually.

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LDI Development Project of Drawing-Spinning Machine at Oriental Industries (Suzhou) Ltd.

Due to increased demand of industrial yarn for air bag, Oriental Industries (Suzhou) Ltd. seeks to maintain product quality and increase production capability with the same plant space. It cooperated with equipment suppliers and redesigned spinneret, lubricating system and spinning path. At trial, as there packed too many tows, and it vibrated too much when lubricating, causing it difficult to lubricate and produced too much fluffiness. The drop in product quality was fixed after many trials. Spinning-divided device and extruded bar were used to effectively improved the problem of crowded tows. Beside, we improved yarn-knotter and adjusted ill-quality filament. The production has doubled from 1.25 metric ton/day to 2.5 metric ton/day with unit energy consumption lower by 20%.

Improvement of Forming Machine and Dryer Heating at Far Eastern Dyeing & Finishing (Suzhou) Ltd.

Cloth needs to be dried after dyeing to get rid of extra water and also for shaping, which takes a great deal of thermal energy. In December, 2016, Far Eastern Dyeing & Finishing (Suzhou) Ltd. switched from indirect heating of heating boiler induction oil by natural gas to direct heating by natural gas. The change increased equipment boot speed; spinning speed increased from 25 m/minute to 28 m/minute, a 12% increase. The temperature rate elevated to 100% from 70%, saved natural gas by 0.59 million cubic meters.

Production Capability Increase at Kuanyin Chemical Fiber Plant

Kuanyin Chemical Fiber Plant has been implementing energy conservation project for years. By adjusting production procedure, it increased esterification capability by increasing esterification pressure and induction of titanium catalyst. The production capability increased from 320 metric ton/day to 390 metric ton/day while electricity consumption of the major facilities remain unchanged. 2.19 million kWh of electricity and 637 metric tons of CWM were saved by this measure.

3.2.2 Materials Management

FENC's each production site carries out regular reviews to monitor the utilization of raw materials, introduce new technology and systems and enhance efficiency of raw material utilization. Also, through executing facility maintenance and evaluation of suppliers, FENC ensures the quality of materials and thus is able to improve yield rate to achieve the goal of reducing material usage.

In order to maintain production procedure stability and to avoid mistakes by manual operation, Oriental Petrochemical (Taiwan) Co., Ltd. implemented smart engine system in 2016. This measure could save NT$6.5 million annually.

FENC has also formulated related safety management regulations regarding hazardous materials, including safety guidelines, storage method, and emergency response measures for leaking and provide trainings for related personnel. In 2016, there was no incidence of leaking of oil, fuel, or waste chemicals.

Raw Materials Management

Raw materials account for the largest share of production cost, and quality of raw materials is the key factors that affect the yield rate. Therefore, secured raw material supply and outstanding quality are our top priorities for raw material procurement.

Procurement of Major Raw Materials

Unit: 1000 metric tons

Raw Materials	Sources	2014	2015	2016
PX	Japan, Korea, Singapore, Indonesia, Malaysia, Kuwait, China	848	905	990
PTA	Taiwan, China, Korea, Japan, Thailand	1,317	1,260	1,311
MEG and Bio-MEG	Taiwan, Saudi Arabia, India, Canada, China, Japan	516	506	520
Cotton (Including Organic Cotton and Recycled Cotton)	Taiwan, USA, Brazil, Australia, China, India	82	73	78

Notes: Some PTA are self-produced by Oriental Petrochemical (Taiwan) and Oriental Petrochemical (Shanghai) after procuring raw material PX. The remaining PTA is purchased externally.

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With highest standards in the industry, we strictly follow internal procurement management procedures and procurement regulations to select raw material suppliers that abide by laws and CSR regulations and high independent expert to carry out material examination. For supply stability, raw materials are provided by a number of suppliers, which ensures flexibility that helps us to react quickly to rapidly changing market of raw materials. At the same time, we study the operational situation of suppliers through interviews and market research, so we can make corresponding adjustments when a supplier cannot provide stable supply, ensuring production security and achieving the goal of sustainable management.

We care about impact of raw material to the environment and support use of recycled material. We engage in development and use of biomass material and environmentally friendly plastics such as Bio-MEG, Bio-PTA, 100% Bio-PET, PLA. Besides, we also adopt environmentally friendly material such as organic cotton, BCI cotton etc. to lower the negative impact to the environment and minimize influence of chemicals to human health (Please refer to Chapter 2.2.3 Sustainable.)

Packaging Material Recycling and Management

We care about packaging materials, using environmentally-friendly materials is our top priority. We also recycle and reuse packaging materials and avoid excessive packaging. In addition to doing our own recycling and reutilization, we also collaborate with recycling companies. Qualified contractors help to recycle packaging materials from domestic clients, sort the recycled materials, and sell back to us the packaging materials that are still in good conditions. Every month, we calculate the amount of packaging materials recycled, recycle rate, and achievement rate, and review items we fail to achieve. Through packaging materials recycling management mechanism, the Company has lowered amount of materials used and its cost, and at the same time, reduces waste materials.

FENC achieved 61% packaging materials recycle rate in 2016. We also recycle packaging materials of other companies in the industry to boost recycle rate to exceed 100%, such cases include plastic bases and plates, recycle rates of which are 185% and 106% respectively.

Furthermore, Oriental Petrochemical (Shanghai) adopted packaging bags of 1.2 metric tons instead of previous 1.1 metric tons to reduce use of packaging bags in 2016. Oriental Petrochemical (Taiwan) used to use packaging bags of 1 metric ton. For each container, it used 20 inner and outer packaging bags. Starting from September 2016, it has adopted container bag of 25 metric tons and just one bag for each container. The
auxiliary packaging material for the container bag is reusable square tube. In 2016, the company has reduced 14,471 kg of packaging materials.

One of the major products of Oriental Industries (Suzhou) Ltd. is tire builder fabric, which serves as supporting frame for tire. Cost of cloth roll takes up about 50% of the product cost. The company plans to recycle the cloth roll by client's factory in Japan in 2017, boosting recycle rate of packaging material and lowering cost.

3.2.3 Water Resources Management

FENC is deeply concerned with water resources management and continues to review efficiency of water withdrawal in its daily operation and activities. In addition to recording meter readings every day, the Company also assesses and reviews water withdrawal status and water conservation results in monthly meetings, and devises solutions and improvement plans, such as regular maintenance of facilities, adopting new manufacturing technology, recycling and reusing of wastewater, in order to establish comprehensive monitoring and control of water resources.

In addition to development of the company and changes of the industry, Far Eastern New Century also takes into consideration land utilization needs of residents living in the surrounding areas for water resources planning to effectively manage supply and distribution of water resources. Our water usage and the ways we withdraw water did not bring negative impact to environment and local residents.

We continue to boost water usage efficiency. Far Eastern Industries (Shanghai) Ltd. has conservation plans for short, mid and long terms. For short term, it's 80% reclaimed water; for mid and long terms, 100%. Oriental Petrochemical (Taiwan) Co., Ltd. plans to conserve water withdrawal by recycling discharged water. Besides, all production sites have plans to reduce water withdrawal by planning of production procedure and recycling of reclaimed water. For example, Far Eastern Dyeing & Finishing (Suzhou) Ltd. has a 5-year plan for energy conservation which will reach reclaimed water of 7,000 kiloliter/day in 2019. Hsinpu Chemical Fiber Plant plans to use facilities for recycling of condensate water and discharged water in 2017, with a capacity of 900 kl/day. In 2016, Far Eastern Industries (Shanghai) Ltd. used electrochemistry facility to replace cooling water with medicine and saved 9,600 kl/day, remodeled facility for recycling reclaimed water and saved 190,000 kl/day of tap water. Far Eastern Dyeing & Finishing (Suzhou) Ltd. focuses on daily life water usage and conserve water by installing water saving device to the taps.

Far Eastern Apparel (Vietnam) Ltd. Rainwater Recycle System

The tropical monsoon climate of Vietnam features high temperature and clear distinction of dry and wet seasons. It's raining season in southern Vietnam from May to October, Far Eastern Apparel (Vietnam) Ltd. designed rain water recycle system and installed 10 stainless steel rainwater recycle bins to collect rainwater for toilet cleaning. This could save NT$50,000 each year. The amount is not big, but the goal of recycling natural resources is reached.

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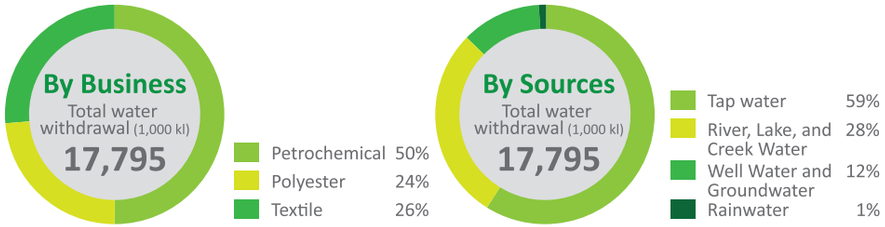
Water Withdrawal in 2016



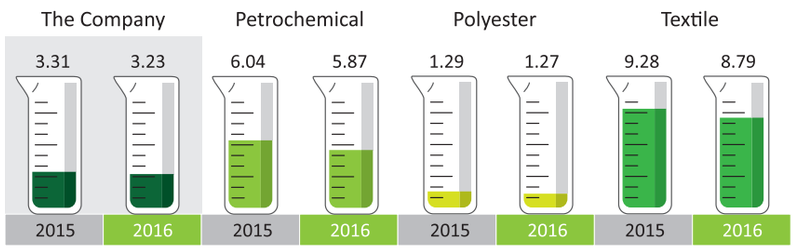
Water Withdrawal

Unit: 1,000 kl

Category	Petrochemical			Polyester			Textile			Total		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Tap water	7,579	7,325	7,483	1,757	1,673	1,689	1,423	1,469	1,398	10,759	10,468	10,570
River, Lake, and Creek Water	1,027	897	1,406	860	955	840	2,690	2,844	2,792	4,577	4,697	5,038
Well Water and Groundwater	2	73	0	1,979	1,607	1,814	362	326	309	2,343	2,005	2,123
Rainwater	0	0	0	0	0	0	11	64	64	11	64	64
Total	**8,608**	**8,296**	**8,889**	**4,597**	**4,235**	**4,343**	**4,486**	**4,703**	**4,563**	**17,690**	**17,233**	**17,795**

Water Intensity

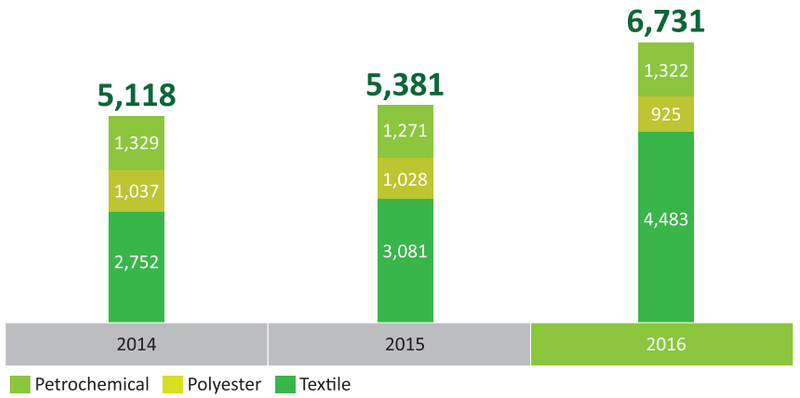
Unit: kl/metric ton of product



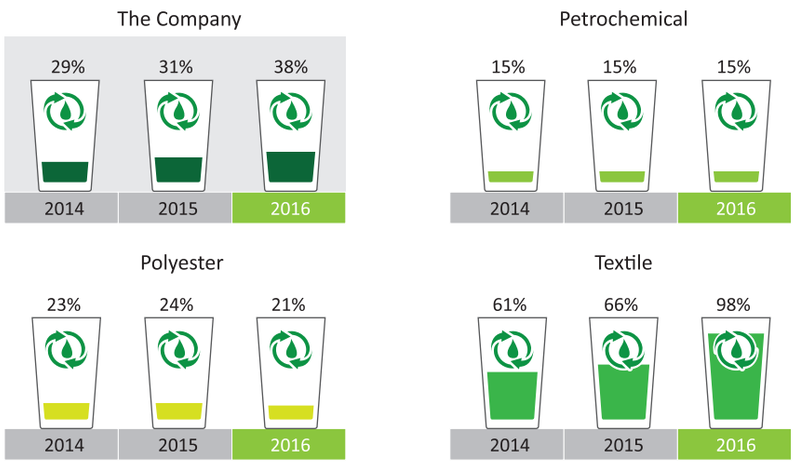
Note: The Textile Business does not include Far Eastern Apparel (Suzhou) Co., Ltd. and Far Eastern Apparel (Vietnam) Ltd.

Recycled Water Volume

Unit: 1,000kl



Percentage of Recycled Water to Total Water Withdrawal



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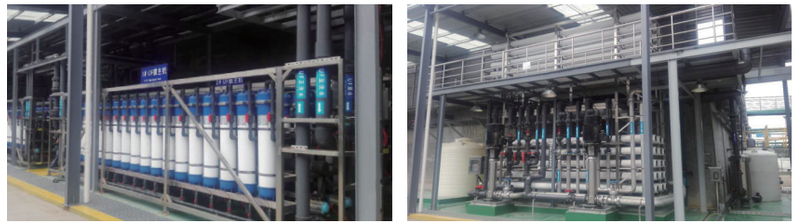
Recycled water was up by 25% in 2016 compared with the previous year. Textile Business water recycle was up by 1,402 thousand kl in 2016, to 4,483 thousand kl, mainly because of the water recycle project of Far Eastern Dyeing & Finishing (Suzhou) Ltd. Its water recycle was up by 47% in 2016. Water density of textile industry is high and we continue to boost our water resource efficiency by various water saving devices and water recycle facilities.

Outcome of Water Saving Project in 2016

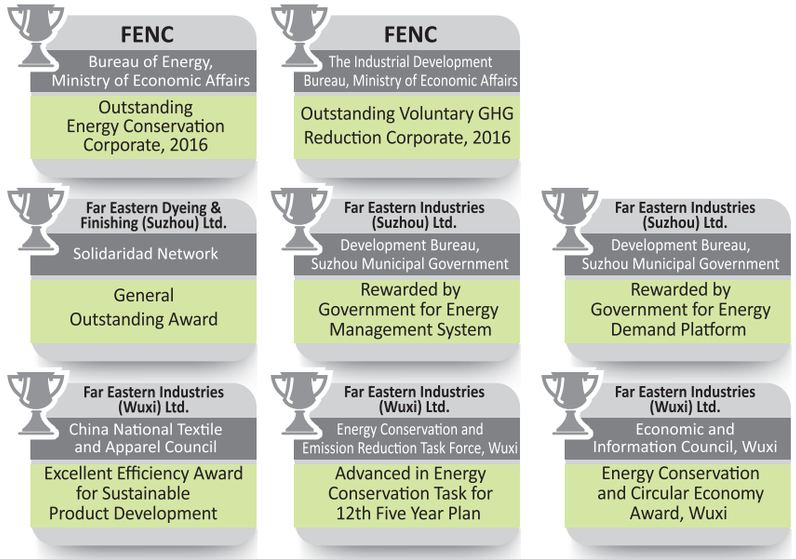
Business	Investment (NT$ 1,000)	Water Saved (kl/year)	Percentage to Water Withdrawal
Petrochemical	4,034	351,725	4%
Polyester	4,669	79,800	2%
Textile	44,562	1,605,804	35%
The Company	53,265	2,037,329	11%

Note: Water saved is calculated by before the project with the same facility and same production procedure



Facility for recycling reclaimed water at Far Eastern Dyeing & Finishing (Suzhou) Ltd.

3.2.4 Outstanding Achievements



FENC Was Awarded "Outstanding Energy Conservation Corporate" by Bureau of Energy, Ministry of Economic Affairs 2016

Outstanding Energy Conservation Corporates of 2015 were awarded by Bureau of Energy, Ministry of Economic Affairs on August 1, 2016. The Bureau awarded "Energy Conservation Model" to corporates according to application documents. A total of 18 corporates received the award. Hsinpu Chemical Fiber Plant received the award of 1% energy saving corporates by the Bureau for its outstanding performance. Hsinpu Chemical Fiber Plant finished 65 projects in energy saving in 2015 which conserved 8,557 KW of electricity and reduced 4,450 metric tons of GHG emission.

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Far Eastern Industries (Wuxi) Ltd. Was Honored with "Excellent Efficiency Award for Sustainable Product Development"

To enhance the development trend of energy efficiency and green production, China National Textile and Apparel Council established "Excellent Efficiency Award for Sustainable Product Development" for the first time and announced Far Eastern Industries (Wuxi) Ltd., along with 11 other corporates, award winners on December 12, 2016 at the "China National Textile and Apparel Innovation Conference" held in Beijing.

The award appraisal was based on 5 aspects: energy management system establishment, improvement of energy conservation in production, energy use in general, performance and award of energy saving and patens. With an excellent team for energy saving, complete energy management system and outstanding techniques and continued improvement in technique and spirit, Far Eastern Industries (Wuxi) Ltd. was awarded with this honor.

FENC Was Awarded "Outstanding Voluntary GHG Reduction Corporate, 2016"

Bureau of Energy, Ministry of Economic Affairs awarded 16 corporates with outstanding voluntary GHG reduction on November 25, 2016. Hukou Mill of FENC was the only from textile industry. It has focused mainly on increasing facility efficiency. In 2015, the Mill saved 2,000 KW of electricity. In 2016, it was 2,285KW. It is equivalent to reduction of 2,263 metric tons of GHG emission in the 2 years.

Far Eastern Dyeing & Finishing (Suzhou) Ltd. Received General Outstanding Award From Solidaridad Network

Solidaridad Network is an international NPO dedicated to sustainable development. For more than 40 years since its inception, it has been dedicating to global sustainable trade and environmental protection and is one of the founding agencies of international Fair Trade system. Solidaridad Network has 10 district centers globally. The China Center's projects are sustainable development in agriculture and CSR and environmental protection for manufacturing industry, with cotton, soy beans, palm oil and teas and textile dyeing production its main foci of projects.

Far Eastern Dyeing & Finishing (Suzhou) Ltd. participated in the (Better Mill Initiative) (BMI) of Solidaridad Network China in 2015. BMI includes water and energy efficiency, chemical management, waste management (water, gas, and solid waste) and SHE at working place and CSR issues. In order to boost sustainable performance of dyeing and printing industry, Solidaridad Network and experts offered technical support while forums increased exchange and sharing of knowledge among peers. Far Eastern Dyeing & Finishing (Suzhou) Ltd. received General Outstanding Award for its excellent performance in environment and chemical management. The General Outstanding Award ceremony was hosted in the Sustainable Textile Supply Chain Forum on January 2016.

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3.3 Management of GHG

Local governments are adopting stricter policies regulating GHG emissions. FENC has established GHG management mechanism at all production sites. The Energy Task Force members at all the production sites discuss, formulate, and implement GHG management with related departments in the plants regularly. Furthermore, FENC has been a step ahead of the government and launched a GHG emission inventory and audit at all production sites, establishing a sound foundation for further reduction of GHG emission.

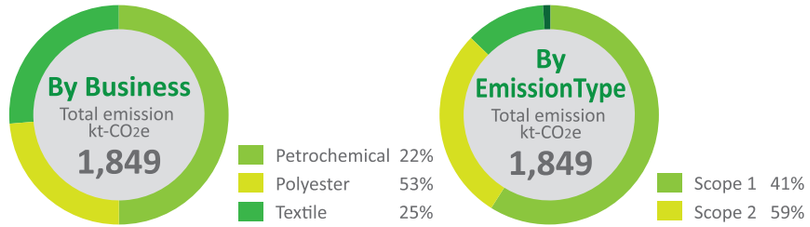
In response to "Trial Procedures of Shanghai Municipality on Carbon Emission Administration", Oriental Petrochemical (Shanghai) and Far Eastern Industries (Shanghai) formulated carbon emission and carbon trade management organization regulations and procedures, establishing carbon emission management division, carbon trade decision-making division, carbon trade capital trading division, and carbon trade confirmation division, to control the process of carbon trading.

Both Hsinpu Chemical Fiber Plant and Kuanyin Chemical Fiber Plant set the emission reduction goal at 2% per year. Kuanyin Dyeing and Finishing Plant's goal is at 2.5% per year. Meanwhile, the plants have actively participated in local government's regulation amendment to demonstrate how much we cared about the issue. Industrial Development Bureau, MOEA launched a "GHG management task force" in 2016, Director of Hsinpu Chemical Fiber Plant was convener of textile section which participated in major issue discussion, integrated industry point of view, assisted government in response and action plan. In response to Taoyuan Low Emission Green City regulations on the exercise of autonomy, Far Eastern Fibertech Co. plans to replace oil-burning boiler by natural gas boiler in 4th quarter 2017 to reduce GHG emission intensity.

3.3.1 GHG Inventory

In order to be in full control on the status of GHG emission for the formulation of GHG reduction plan, FENC conducted an inventory on GHG emissions at all production sites in 2015. All production sites must conform to ISO 14064-1 or local official standards and conduct an inventory and calculation of GHG emissions, and must complete third party auditing every 3 years. Currently, among the 16 production sites included in this report, 14 have completed GHG emission audit by the third party for the past 3 years. Kuanyin Dyeing and Finishing Plant is under expansion construction and will conduct the 3rd party audit after the construction. Far Eastern Apparel (Vietnam) Ltd. is included in the report for the first time this year and will start its 3rd party audit in 2018 by the resources and experiences within the group. Through establishing inventory data, FENC can set reduction goals and execution priorities, so as to ultimately reduce GHG emissions for mitigation of climate change.

GHG Emission in 2016



GHG Emission

Unit: kt-CO_2e

Category	Petrochemical			Polyester			Textile			Total		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Scope 1	335	326	243	518	530	444	73	68	69	925	924	755
Scope 2	160	158	175	548	558	530	377	377	390	1,085	1,092	1,094
Biofuel CO_2 Emission	24	20	37	0	0	0	0	0	0	24	20	37
Total	**494**	**483**	**418**	**1,066**	**1,088**	**974**	**450**	**445**	**458**	**2,010**	**2,016**	**1,849**

Note:

1. Scope 1: direct emission includes CO_2, CH_4, N_2O, PFCs, HFCs and SF_6; scope 2 indirect emission includes CO_2, CH_4, and N_2O. Total emission does not include CO_2 emission from biofuel.
2. Oriental Petrochemical (Shanghai) and Far Eastern Industries (Shanghai) conform to SH/MRV-004-2012, which only CO_2 emission is calculated.
3. Production sites which have completed ISO 14064-1 standards for GHG inventories in 2014 include: Oriental Petrochemical (Taiwan), Hsinpu Chemical Fiber, Kuanyin Chemical Fiber Plant, Oriental Petrochemical (Shanghai), Far Eastern Industries (Shanghai), Far Eastern Industries (Suzhou), Far Eastern Industries (Wuxi), Far Eastern Apparel (Suzhou), Oriental Industries (Suzhou), and Far Eastern Dyeing and Finishing (Suzhou).
4. Production sites which have completed ISO 14064-1 standards for GHG inventories in 2015 included: Oriental Petrochemical (Taiwan), Hsinpu Chemical Fiber Plant, Kuanyin Chemical Fiber Plant, Far Eastern Fibertech, Neili Texturizing Plant, Hukou Mill, Oriental Petrochemical (Shanghai), Far Eastern Industries (Shanghai), and Wuhan Far Eastern New Material.
5. Production sites which have completed or were in progress of ISO 14064-1 standards for GHG inventories in 2016 included: Oriental Petrochemical (Taiwan), Hsinpu Chemical Fiber Plant, Kuanyin Chemical Fiber Plant, Oriental Petrochemical (Shanghai) and Far Eastern Industries (Shanghai).
6. The total emission for FENC's 5 production sites in Taiwan is 768 kt- CO_2e.

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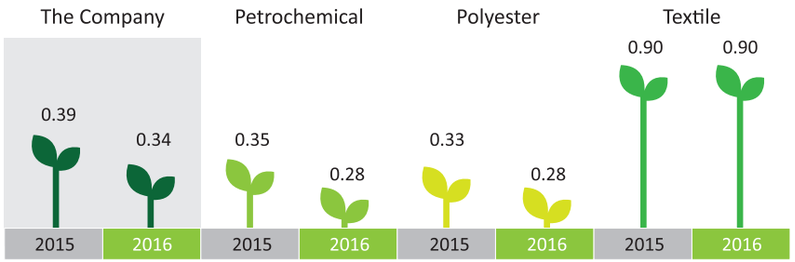
GHG Emission Intensity Unit: t-CO_2e /metric ton product



Note: The Textile Business does not include Far Eastern Apparel (Suzhou) Co., Ltd. and Far Eastern Apparel (Vietnam) Ltd.

Implementation of GHG Audit Scope 3: Employee Business Trip by Air Travel

Employee business trip is inevitable in business operation. To implement GHG management, FENC started carbon inventory from employee business trip from October 2016. Up to end of December 2016, the carbon emission from employee business trip is 238 metric ton of CO_2e.

The calculation of GHG emission is using the air travel carbon calculator implemented by International Civil Aviation Organization, ICAO, adding up all the mileage of employees' business travels. Air travels by both Taiwan and China employees were included in the calculation.

Oriental Petrochemical (Shanghai) and Far Eastern Industries (Shanghai) Adopted Natural Gas Burning Boiler to Replace Coal Burning Boiler

Oriental Petrochemical (Shanghai) and Far Eastern Industries (Shanghai) adopted natural gas burning boiler to replace coal burning boiler in 2016. The GHG emission for both plants is lowered in 2016 by 36% and 31% respectively compared with previous year, The GHG emission intensity reduced over 30%.

3.3.2 Use of Renewable Energy

Subscription to Green Power

To support the development of renewable energy in Taiwan, FENC voluntarily purchased green power in 2015, the amount was 300,000 kWh in 2016, increased 100,000 than the previous year, showing our support for local renewable energy, such as wind power, solar power, and geothermal power and contributing to environmental protection.

Renewable Energy Solar Power Station

Solar power is an environmental-friendly and sustainable renewable energy in that it never runs out. To increase the use of green energy and reduce GHG emissions and environmental impact, FENC launched Solar Power Station project in 2015.

As the production sites in Taiwan have relatively lower daylight hours and higher installation cost, we decided to install solar PV panels at 3 production sites in China, they are Oriental Industries (Suzhou), Far Eastern Dyeing & Finishing (Suzhou), Far Eastern Industries (Shanghai). Total installed capacity is 6,102 kW. Since its enabling in August 2016, 1,949,348 kWh of electricity was generated until end of 2016, which is equivalent to reduction of 1,578 metric ton of CO_2e emission and NT$5.86 million of electricity bills. Installation at Far Eastern Industries (Wuxi) Ltd. was suspended due to density of facility and enhancement of steel structure. In the future, FENC plans to implement renewable energy station at other production sites.


Far Eastern Industries (Shanghai)


Oriental Industries (Suzhou)


Far Eastern Dyeing & Finishing (Suzhou)

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3.4 Pollution Prevention and Waste Management

FENC complies with regulations of "CSR Policy" and adopts preventive measures for pollution, focusing on handling of waste materials and avoiding air, water, soil pollutions. We prioritize the consideration of environmental risks in all production processes and strive to minimize pollution. We also faithfully report amounts of wastewater, emissions and waste materials as well as abide by all related laws and regulations.

3.4.1 Air Pollutant Discharge Management

Through pollution prevention facilities, FENC processes pollutants produced through manufacturing processes and continues to review existing facilities and production processes to find areas for improvement. We also conduct periodical examination on boilers and pollutant emitting channels to make sure that all emissions are within limits of related regulations.

There has been a trend in stricter control from governments for air pollution globally. "General Standard for Air Pollution Emissions" of Shanghai City has stipulates a stricter standards for corporate air pollution emissions since January 1, 2017. Environmental Protection Bureau of Taoyuan City announced "The Self-Governing Regulations on Fixed Pollutants and Prevention Facility Monitoring and Control for Taoyuan city" in 2016. FENC has started facility implementation accordingly.

In 2016, both Hsinpu Chemical Fiber Plant and Kuanyin Chemical Fiber Plant have installed OSC to collect VOC to boilers. This measure has lowered VOC emission, reduced odor emission and eased loading of wastewater treatment. Besides, Far Eastern Industries (Shanghai) and Oriental Petrochemical (Shanghai) have formulated reduction of VOCs emission plans in 2015, adopting Leak Detection and Repair (LDAR) to manage all VOCs discharge points, and carried out identification, photographing, numbering, recording, and labeling in 2016. The Company also conducts inspections and repairs leakages in accordance with the agenda set in the plans. In November 2016, both have passed industrial VOC review by Shanghai City. Oriental Petrochemical (Shanghai) implemented lower emissions project in 2016 which included adding lids to wastewater tank, sealing facility for solid waste and sludge drying machines, treatment by active carbon and water cleaning of collected exhaust gas, replacement of catalyst, installment of monitors in front of or behind the catalyst burner. Far Eastern Industries (Shanghai) Ltd. plans to remodel the ventilation exit of the public wastewater station in 2017. There will be channels to process the wastewater together to lower VOC emission. Kuanyin Chemical Fiber Plant plans to upgrade is NOx treatment facility and to lower NOx emission by 60%.

Oriental Petrochemical (Taiwan) Co., Ltd. Installed Dust Collection Facility

Oriental Petrochemical (Taiwan) Co., Ltd. is located in Guanyin Industrial Area and surrounded by plants and residential communities. Any odorous emission or spread of dust is likely to result in complaints. To pursue the goal of zero pollution, each month Vice President of Production will convene a environmental impact meeting to track and eliminate potential pollutants which might already be in existence for some time.

The previous design of PTA end product storage is prone to spread dust when loading to tankers. As the plant is not from the sea and is often under monsoon weather influence and spread the dust the neighborhood of the plant. Besides, the duct on tankers will spread along the way when the tankers leave the plant area. This not only jeopardizes quality of environment and is bad for image of the company.

The above situation was presented at the environmental impact meeting and an improvement team was established. After continued improvement for one year, the 8 storage tanks were remodeled in April 2016. The dust emission from ventilation was lowered by 82.2%, from 129 mg/Nm^3 to 23 mg/Nm^3, better than current control standard. Besides, each year, 185 metric tons of PTA is retained from the lowered emission, the cost saved is about NT$3.88 million.

Total air pollutant emission in 2016 increased by 13% than previous year, mainly because of the 13 more VOC items measured at Hsinpu Chemical Fiber Plant. NOx and SOx emissions decreased by 20% in 2016 than previous year due to replacement of CWM boilers by gas boilers at Oriental Petrochemical (Shanghai) Corp. and Far Eastern Industries (Shanghai) Ltd. Air pollution was effectively lowered by 80%. See the figures below:

Unit: mg/Nm^3

	Oriental Petrochemical (Shanghai)		Far Eastern Industries (Shanghai)		Average Fluctuation
	Before	After	Before	After	
NOx	193	48	450	67	-80%
SOx	95	3	90	3	-97%
Smog	8	1	40	0	-94%

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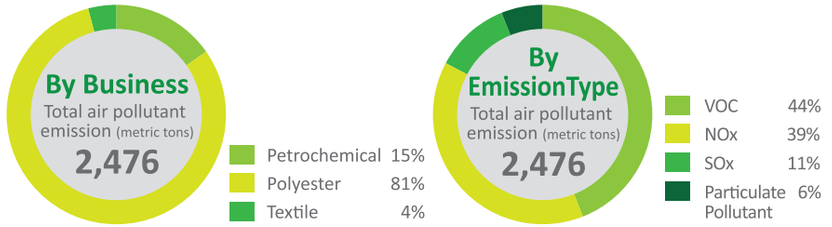
Air Pollutant Emission in 2016



Air Pollutant Emission Unit: metric tons

Category	Petrochemical			Polyester			Textile			Total		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
NOx	381	492	167	615	811	750	36	32	42	1,033	1,336	960
SOx	162	187	123	413	191	153	8	8	7	582	386	284
VOC	266	198	87	243	172	990	12	15	16	521	385	1,094
Particulate Pollutant	3	3	2	88	60	113	25	23	23	115	86	138
Total	**812**	**881**	**380**	**1,359**	**1,235**	**2,008**	**81**	**77**	**89**	**2,252**	**2,193**	**2,476**

Note:
1. Only gases emitted are listed.
2. Particulate pollutant include PM, dust and smog.
3. The data includes four types: actual measured values, annualized sample values, calculate values, and permitted amounts of emissions. Actual measured values come from Oriental Petrochemical (Shanghai), Hsinpu Chemical Fiber Plant, Kuanyin Chemical Fiber Plant (NOx, SOx, particulate pollutant), Far Easter Fibertech, Kuanyin Dyeing and Finishing Plant, Wuhan Far Eastern New Material Ltd., Far Eastern Industries (Wuxi); annualized sample values are from Far Eastern Dyeing & Finishing (Suzhou) and Far Eastern Industries (Shanghai); calculated values are from Oriental Petrochemical (Taiwan), Kuanyin Chemical Fiber Plant (VOC), Hukou Mill, Neili Texturizing Plant, Far Eastern Industries (Suzhou), Far Eastern Apparel (Vietnam); permitted amounts of emissions are from Oriental Industries (Suzhou).

3.4.2 Wastewater Discharge Management

FENC has formulated comprehensive regulations and procedures for wastewater treatment. Sewage is treated prior to discharge, and quality of wastewater is regularly checked to ensure compliance with government regulations. The Company has also obtained enterprise sewage discharge permit in accordance with related regulations, and discharges sewage into the permitted water bodies. Furthermore, we have enhanced wastewater recycling and increased volume of wastewater recycled to reduce volume of sewage discharged to realize our goal of recycle and reuse. FENC's discharged wastewater is not reused by any other organizations. There is no leakage reported in 2016.

Volume of Sewage Discharged and Location Unit: 1,000kl

Location	Production Site	Volume of Sewage		Sewage Treatment Method and Discharge Location
		2015	2016	
Taiwan	Hsinpu Chemical Fiber Plant	1,046	1,062	Wastewater from manufacturing process is bioprocessed to meet local effluent standards before being discharged into the Fengshan River.
	Kuanyin Chemical Fiber Plant	382	434	Wastewater from manufacturing process is bioprocessed to meet local effluent standards before being discharged into the Shulin River.
	Kuanyin Dyeing and Finishing Plant	473	514	Wastewater is processed at onsite wastewater treatment plant before being discharged to the sewage treatment plant of the industrial park.
	Neili Texturizing Plant	103	110	Only domestic wastewater, which is permitted to discharge directly into sewage system.
	Hukou Mill	98	74	Only domestic wastewater, which is bioprocessed onsite (oxidation and aeration) before being discharged into the Desheng River.
	Oriental Petrochemical (Taiwan)	2,358	2,579	Wastewater from manufacturing process is bioprocessed (deep-well aeration and anaerobic treatment) to meet local effluent standards before being discharged into the Shulin River.
	Far Eastern Fibertech	97	99	Wastewater from manufacturing process is bioprocessed (contact oxidation) and undergoes the precipitation process to meet local effluent standards before being discharged into the Shulin River.
China	Oriental Petrochemical (Shanghai)	1,348	1,347	Wastewater from manufacturing process, domestic sewage, and lab wastewater are all discharged to sewage treatment plant. Treated wastewater is recycled at reclaimed water recycling unit; final wastewater is discharged through underground sewage system to sewage treatment plant in eastern Fengxian District before being discharged into sea.
	Far Eastern Industries (Shanghai)	483	425	Wastewater is treated at the plant's wastewater treatment station before being discharged to city wastewater treatment plant.
	Wuhan Far Eastern New Material	12	12	Only domestic wastewater, which is directly discharged into Wuhan City's sewage system.
	Oriental Industries (Suzhou)	140	140	Wastewater from manufacturing process is treated by production department using dosing chemical before being discharged to washing tower through filtering press. The water is recycled. Domestic wastewater is permitted to be directly discharged into the city's sewage network for centralized management.
	Far Eastern Industries (Suzhou)	9	11	Domestic and production effluents are discharged into sewage treatment plant; wastewater is treated to meet local effluent standards before being discharged into the Grand Canal.
	Far Eastern Industries (Wuxi)	4	4	Only domestic wastewater, which is directly discharged into Wuxi's sewage system.
	Far Eastern Dyeing & Finishing (Suzhou)	2,663	2,474	Wastewater treatment is commissioned to national sewage treatment plant.
	Far Eastern Apparel (Suzhou)	129	93	Domestic wastewater is treated at the plant to meet effluent standards before being discharged into city sewage network. The wastewater is ultimately discharged to sewage treatment plant in the south of the city.
Vietnam	Far Eastern Apparel (Vietnam)	69	76	Waster is discharged to the sewage process center of the industrial area
	Total	**9,433**	**9,453**	

Note:
1. The differences between sewage discharge and water withdrawal come from evaporation at cooling tower. Small volume of water is lost through related manufacturing processes.
2. The discharged wastewater poses no obvious impact to waterbodies and related habitats.

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◆ **Sewage Management Measures**

Wastewater Monitoring	• Formulation of related management guidelines • Onsite discharge monitoring • Wastewater plant management • Outsource water quality examination and report to competent authority • Submission and formulation of report on operation status
Personnel Training and Facility Maintenance	• Promotion of water pollution prevention • Regular maintenance and repair of machines • Regular training of management personnel and assistance in acquiring related certificates

3.4.3 Waste Management

The objective of FENC's waste management is to increase the rates of reusing and recycling waste materials produced through the production process, reducing the amount of waste from the source. All handling and removal of waste materials are in compliance with related laws and regulations, permits have been applied and obtained, and all amounts are reported. Qualified contractors are employed to remove the waste materials. The governance principle of waste management is "categorization to reduces garbage; turn waste into valuables, turn valuables into something precious." All production units follow categorization of wastes strictly, and valuable wastes are sold through procurement department for external organizations to recycle and reuse. Qualified contractors are commissioned for the removal of invaluable wastes. We strictly review qualification of contractors. In addition to GPS tracking, FENC also conducts inspections on removal and transportation of waste materials from time to time.

Hazardous business wastes produced through the manufacturing process are collected and stored at designated sites before qualified contractors are commissioned for removal and transportation. Ad hoc inspections are conducted by having personnel follow the contractors for the removal and transportation of waste materials to ensure contractors comply with all regulations.

In 2016, Far Eastern Industries (Shanghai) reviewed hazardous wastes according to "National List of Hazardous Wastes" and removed cloth used to wipe heavy oil on machines and equipment from the list and established goal for reduction of hazardous wastes. It is expected to reduce 10% in 2017 than in 2016. Oriental Petrochemical (Shanghai) Corp. made use of existing wastewater process equipment to handle debris of liquid oxidation and increase anaerobic rate to reduce production of aerobic sludge and at the same time consume aerobic sludge by anaerobic system.

In 2016, total waste volume was 10% less than 2015. General business wastes was down 9% and hazardous business wastes reduced by 36%; Far Eastern Dyeing & Finishing (Suzhou) Ltd. is planning on the drying process for sludge after reducing water content of sludge, currently by incineration instead of landfilling, it is expected to lower weight of sludge greatly in the future.

Improvement of Dust from Coal Water Mixture at Hsinpu Chemical Fiber Plant

Hsinpu Chemical Fiber Plant has adjusted its production process to deal with dust in the process of production to lower carbon content in the dust. In 2016, it has passed dust certification for Pre-mix plant standard. The dust can be sold to Pre-mix plan, turning waste into value-generating product.

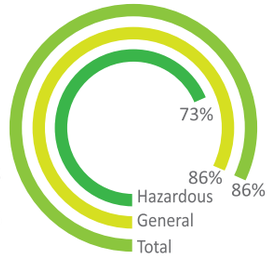
Sludge Drying System

Hsinpu Chemical Fiber Plant installed sludge-drying system in 2015 to dry up sludge and reduce water content. Weight of sludge is reduced over 50%, lowering carbon emission produced through the process of removal of sludge and cutting down on the cost.

As the outcome is outstanding, other production sites began adopting sludge-drying system too. Oriental Industries (Suzhou) Ltd. adopted the system in 2016 and the water content in sludge was reduced to under 35% from 85%, weight of sludge was reduced by 55%. Kuanyin Dyeing and Finishing Plant is installing equipment and expects to activate the system in 2017. Kuanyin Chemical Fiber Plant is to finish installation in 2018.

◆ **Type of Waste Materials in 2016**

◆ **Waste Recycling and Reuse Percentage in 2016**



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◆ **Data of Waste Materials** Unit: metric tons

			2014	2015	2016
General Business Wastes	Manufacturing Process Wastes	Recycling and Reuse	61,351	84,934	75,263
		Energy Uses	198	214	207
		Incineration	4,995	4,649	8,854
		Landfilling	830	3,328	339
		Other Treatment Methods	393	1,003	871
		Subtotal	**67,767**	**94,128**	**85,534**
	Domestic Wastes	Recycling and Reuse	2,777	2,601	2,417
		Energy Uses	340	340	340
		Incineration	1,119	1,088	1,101
		Landfilling	300	341	365
		Other Treatment Methods	110	110	110
		Subtotal	**4,646**	**4,479**	**4,333**
	Total General Business Wastes Volume		**72,412**	**98,608**	**89,868**
Hazardous Business Wastes	Recycling and Reuse		5,173	3,957	2,538
	Energy Uses		0	0	0
	Incineration		1,416	1,390	872
	Landfilling		0	0	0
	Other Treatment Methods		54	62	66
	Total Hazardous Business Wastes Volume		**6,642**	**5,409**	**3,476**
Total Waste Volume			**79,055**	**104,017**	**93,344**

Note: Recycling and reuse includes recycling and reuse by the plants, selling of waste materials, and recycling by commissioned contractors.

3.5 Green Production Process

FENC strives to do its part for environmental sustainability, actively reducing amount of energy consumed in production processes. The Company has also set the long-term goal of zero waste production and responds to UN's SDG12, responsible consumption and production, to ensure a sustainable production model and steadily proceeding into green industry.

Dope Dyeing Method

In general, fiber dyeing is carried out after fiber spinning and requires large amount of energy and water; furthermore, dyes and chemical solutions further impact the environmental, and treating wastewater needs additional costs. FENC uses dope dyeing method to replace traditional fiber dyeing, adding pigment to liquid fiber solution before spinning, which greatly reduces energy consumption, water withdrawal, chemicals and wastewater, and achieves greater color fastness.

We use low-pollution production to produce dope-dyed polyester fiber, which is greatly welcome and praised by our clients. In order to meet the needs of production diversity with small volume, in 2016, FENC developed non-traditional production method which shortened the changing time of color fiber from 8 hours to 3 hours. This method not only produces color fiber with lower consumption but also provides clients with dope dyeing product in a more environmental-friendly way.

3D Virtual Development for Apparel

The making of apparel starts from design, then making paper structure, then sample production with cloths. As the process takes time and is resource consuming, in order to reduce use of various resources such as energy and materials, and also the impact to environment by printing, Far Eastern Apparel (Suzhou) Ltd. and Far Eastern Apparel (Vietnam) Ltd. introduced 3D Virtual system in July 2016. By digitalized printing and embroidery mockup and use of 3D designs for discussion with clients, it not only increases efficiency in apparel development, but also reduces material wastes in previous aimless development. The Company has dealt with its brands clients such as Nike and Columbia with the 3D virtual apparel development system. In the future, the system will be further implemented to other brands clients.

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Revolution in the Textile Industry: Waterless Dyeing and Finishing Technology

FENC cooperates with Nike and Dutch waterless dyeing developer DyeCoo to realize waterless dyeing using supercritical carbon dioxide, using the recyclable "carbon dioxide" to replace traditional "water" as the medium of dyeing. The process requires no water, avoiding the need to discharge water and add chemical additives, and lowering the consumption of petrochemical energy needed for heating water (oil, natural gas, coal, etc.). Today, with depleting water resources and instable supply, this is a revolutionary breakthrough.

Item	Traditional	Waterless Dyeing
Water Withdrawal (per kg of fabric)	100-180L	No need of water
Energy Consumption (per kg of fabric)	Electricity: 1 kWh Steam: 10kg	Electricity: 2.5 kWh Steam: 4kg
Chemicals (dyeing aids) (per kg of fabric)	Aids: 0.2kg Dyes: 0.07kg	No need for aids Dyes: 0.02kg
Daily Production (same dyeing tank)	1,200kg	2,000kg

Waterless dyeing and finishing is an innovative and pioneering technology and there remains aspects for breakthrough and optimization. FENC's waterless dyeing plant began trial operation in 2014 and under joint effort with partners. We will continue to innovate software, and renovate hardware. Currently, energy consumption of waterless dyeing process (electricity and steam) has been further lowered, with the current daily production of 40,000kg, it is equivalent to reduction of 4,000,000 l of water and 8,000 kg of dyeing additives every month, and efficiency is elevated from 65% to over 92% in 2016. Waterless dyeing facilities need smaller spaces compared to traditional dyeing. As the technology matures and replaces existing technology, it can save significant amount of clean water and energy for the world annually; industry can reduce required surface area for plants and enhance production efficiency.

In order to implement green production, Kuanyin Dyeing and Finishing Plant has invested its second waterless dyeing and finishing equipment. The operation is expected in 2018 with monthly production at 80,000 kg.

Water-saving Manufacturing Process for rPET

FENC makes Recycled PET, rPET from recycled PET bottles and turns them into flakes through the process of cleaning, selecting, cleaning of chips by its subsidiary Oriental Resources Development Co. It consumes large amount of water in the process.

Originally, the first plant used clean water in the flotation tank. The Company started replacing the clean water in the flotation tank by installing wastewater pipes to the flotation tank and used it for cleaning and separating impurities. The second plant collects water used for cleaning bottle chips for use of flotation facility and cleaning of bottles, reducing water consumption for the whole production line. After adjustment, the daily water consumption for the first and second plants was reduced by 55% and 45%, a leading production process in the industry.

3.6 Neighboring Community Communication and Response

Most of FENC's production sites are located in industrial parks. Only a handful of production sites are located in residential areas, such as Hsinpu Chemical Fiber Plant and Hukou Mill. We proactively communicate with neighboring residents and listen to their opinions about how to improve the environment. In our opinion, the neighborhood around the plant is in close relationship with local residents' living. We would like to upgrade the environment to maintain amiable relationship and increase work efficiency so that our production activity can proceed with ease.

In 2016, Hsinpu Chemical Fiber Plant installed noise suppressor device to motors and wind pipes to lower noise from air conditioning facility to reduce noise impact to neighboring residents. The plant also adjusted the production transportation timetable in accordance with local residents' living pattern. Far Eastern Industries (Wuxi) Ltd. had their employees to grow trees in the spare land space in the plant. 200 trees have been planted. Far Eastern Dyeing & Finishing (Suzhou) Ltd. has implemented environmental afforestation policy for landscaping and lowering plant indoor temperature, which has dropped from 35 to 31°C. Kuanyin Dyeing and Finishing Plant has improved the side ventilation of the plant for better air exchange. The summer temperature inside the plant has dropped from 36 to 33°C, which has improved working environment greatly.

Furthermore, each production site has its own emergency response procedure and carries out regular drills to minimize the impact on surrounding communities in the event of emergency. Communities around production sites can submit appeals or complaints through official channels. Regarding the channels and ways of communication between production sites and residents in nearby communities, please refer to Chapter 1.4.4 Complaint Registering.