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Navigating a Green Future

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Target Readers:

- ■ Employee/ Labor Union
- ■ Direct Customer
- ■ Government
- ☐ Business Partner (Supplier/Contractor)
- ■ External Audit Agency/ Media
- ■ Shareholder/Investor/ Financial Institution
- ☐ Industry Association
- ■ Local Resident and Organizatoin

3 GOOD HEALTH AND WELL-BEING
6 CLEAN WATER AND SANITATION
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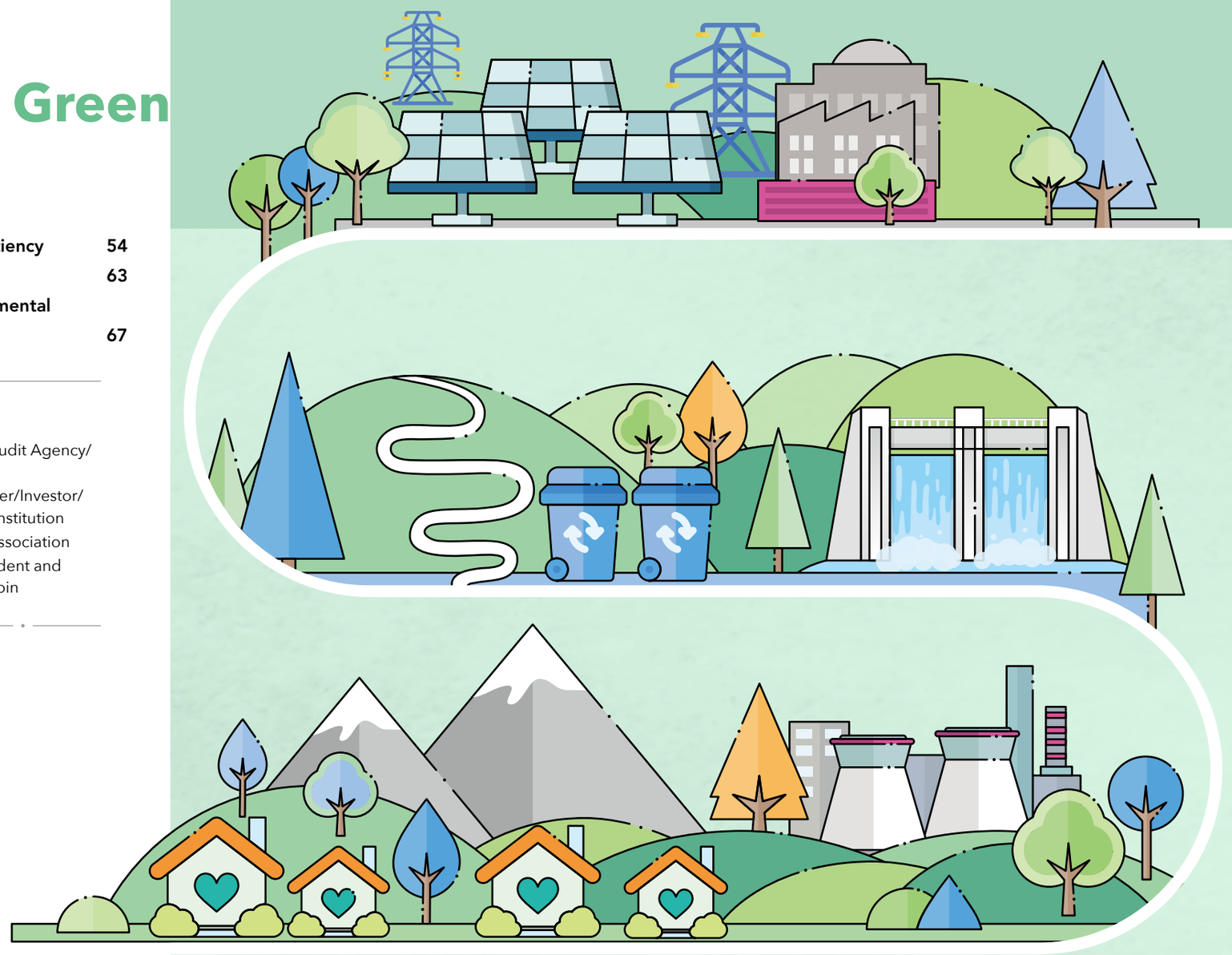

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2020 Highlights

Winning 2020 FinanceAsia
Best Environmental Stewardship Award

New Cogeneration Plant
Certified Energy Efficient Plant by Ministry of Economic Affairs
Winning Excellence for the 2020 Far Eastern Group Energy Conversation Award

Air Pollutants
Per Unit Production
18% Reduction

Reduction in Non-Recycled and Non-Reused Waste Per Unit Production **4%**
Percentage of Recycled and Reused Waste 88%

Water Withdrawal Per
Unit Production
6% Reduction

Power Generated at Solar Power Station
131.5GWh

Solar Power Capacity
12.4 MW

Energy Saving Projects **97**
GHG Emissions Avoided **78,955tCO2e**

Water Consumption
Reduced **9%**

Water Recycling
Rate **98%**

FEAV Honored in Vietnam
Bình Dương Green Book, Receiving
LEED Silver Certification

Water Saved Through
Water Conservation Projects
6%

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Targets and Progress

	Reducing Energy Consumption Per Unit Production	Reducing Water Withdrawal Per Unit Production	Reducing Waste (Non-Recyclable and Non-Reusable)	Reducing Total Air Pollution	Refining GHG Management	Increasing Renewable Energy Use
2030 Target	Reducing 25%	Reducing 30%	Reducing 30%	Reducing 35%	Implement **continuous reduction** of greenhouse gas emissions	Incorporating **additional renewable energy sources**
2025 Target	Reducing 15%	Reducing 20%	Reducing 20%	Reducing 30%	Reduction Targets Approved by **SBTi**	Increasing **solar power generation**
2021 Target	Reducing 7%	Reducing 12%	Reducing 12%	Reducing 22%	Promote all production sites to **verify** GHG emissions in accordance with the new version of ISO14064-1	Increasing **solar power** generation and planning wastewater treatment and **biogas** power generation
2020 Target	Reducing 5% Completed	Reducing 10%	Reducing 10% Completed	Reducing 20% Completed	Promote all production sites **verifying** major indirect GHG sources Completed	Set up a solar power station in **Vietnam** Completed
2020 Progress	Reducing 7%	Ongoing water conservation projects	Reducing 45%	Reducing 29%	Completing business trip and waste disposal inventory at 16 locations	Adding 1 Vietnam and 1 Taiwan solar power station
Action Plan	• Optimize production and facilities. • Incorporate innovative management approaches.	• Continue with efforts in reducing water withdrawal at the source. • Increase percentage of recycled water utilized.	• Optimize waste recycling and classification. • Enhance waste recycling and reuse.	• Monitor and control air pollution. • Replace outdated equipment.	• Expand the scope of inventory and category of indirect emissions. • Implement GHG reduction programs. • Assess GHG reduction targets.	• Build solar power station. • Form partnerships with providers of additional forms of renewable energy.
	7 12 13	6 12	3 12 13	3 12 13	12 13	7 12 13

Note: The first 4 targets are set with 2017 as the base year. The targets are applicable to 17 production sites.

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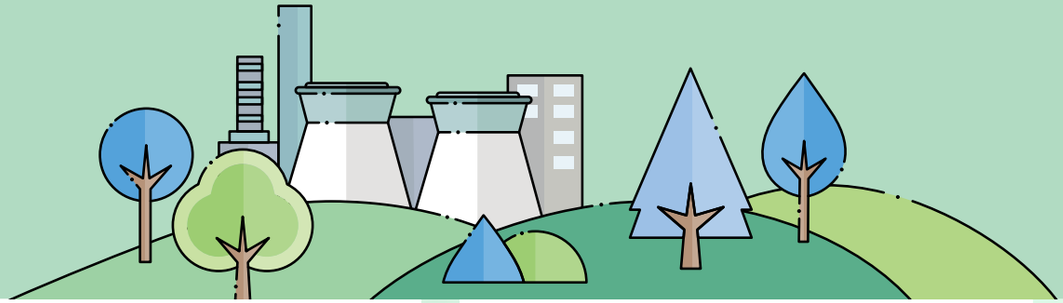


Elevate Energy and Resource Efficiency

Significance and Goals for FENC

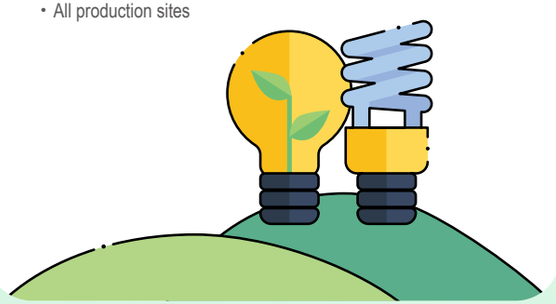
FENC regards natural resources as shared resources. Our goal is to improve the efficiency of energy and resource use to avoid depletion due to over consumption.

Management and Effective Assessment Approach

- Establish targets for reducing energy and resource use.
- Appropriate budget and establish intercompany authority.
- Implement reduction projects and regularly performance tracking.
- Obtain international certifications such as ISO 14001 and ISO 50001.

Authority

- Energy Task Force
- All production sites



Respond to Climate Change

Significance and Goals for FENC

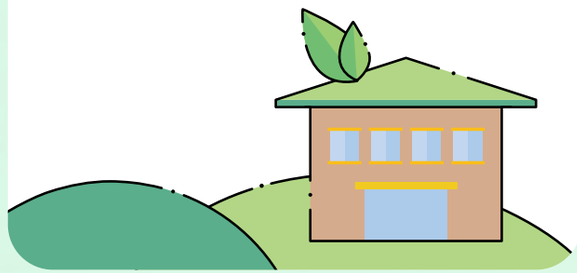
FENC evaluates the risks and opportunities brought by climate change, responding with strategies and implementations that avoid GHG emissions and slow down global warming.

Management and Effective Assessment Approach

- Conduct R&D on products that mitigates effects of climate change.
- Continue to expand the scope and category of GHG inventory.
- Increase the use of renewable energy.
- Obtain international certifications such as ISO 14001 and ISO 50001.

Authority

- Energy Task Force
- All production sites



Prevent and Control Environmental Pollution

Significance and Goals for FENC

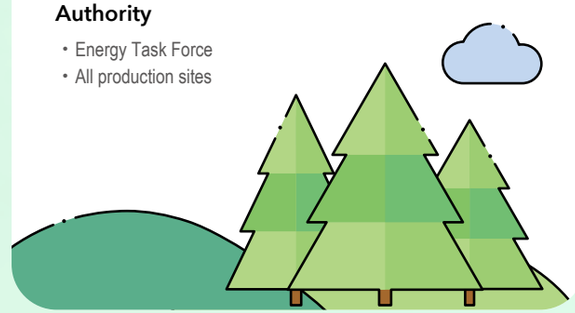
FENC cherishes natural habitat and resources. We are dedicated to keeping pollutants from damaging local environment. By recycling and upcycling land and ocean waste, we prolong the life cycle of natural resources, and safeguard biodiversity and environmental sustainability.

Management and Effective Assessment Approach

- Establish pollution reduction targets.
- Introduce innovative production and facilities.
- Environmental impact assessment for new plant locations.
- Establish corporate authority to track progress.

Authority

- Energy Task Force
- All production sites



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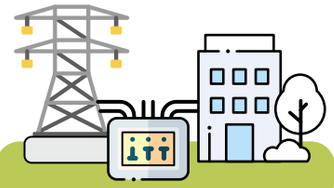
Overview of Environmental Statistic

FENC has a consistent track record in fostering environmental sustainability. With source reduction and recycling as the two major strategies, the goal is to enhance efficiency in resource consumption and mitigate effects of climate change and environmental pollution. It is our unwavering commitment to preserve the beauty of mother nature for our future generations.

Energy

- Energy Consumption **22,872** (TJ)
- Energy Reduction **557** (TJ)
- Percentage of Energy Reduction in Energy Consumption **2%**

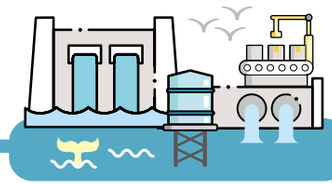


Air Pollution

1,659 (metric ton)
Air Pollution Emissions

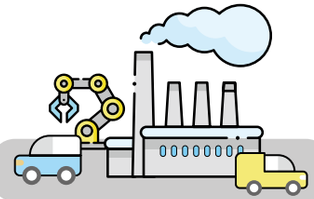
Water

- Water Withdrawal **22,173** (1,000 kL)
- Water Saving **1,385** (1,000 kL)
- Percentage of Water Saving in Water Withdrawal **6%**
- Water Recycled and Reused **1,261,441** (1,000 kL)
- Water Recycling Rate **98%**
- Water Discharge **12,017** (1,000 kL)



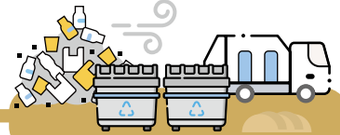
GHG

- GHG Emissions **2,432** ($ktCO_2e$)
- GHG Emissions Avoided **79** ($ktCO_2e$)
- Percentage of GHG Emissions Avoided of Total Emissions **3%**



Waste

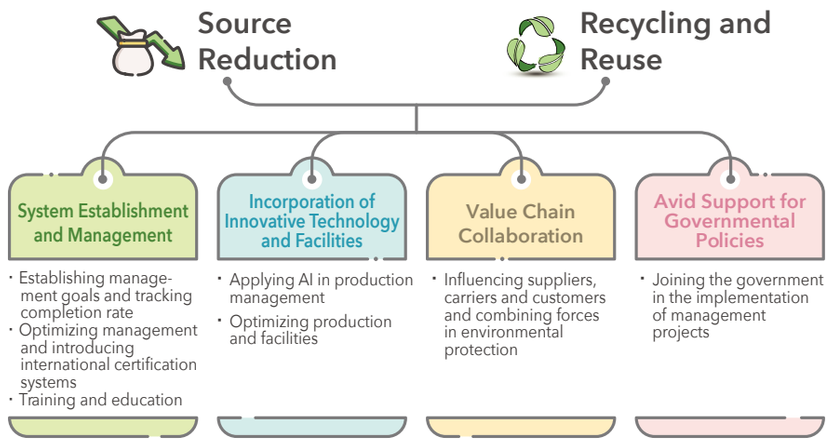
- Waste Volume **173,302** (metric ton)
- Percentage of Recyclable and Reusable Wastes **88%**



Resources Consumed for Operation in 2020
Environmental Impact Avoided in 2020
Environmental Impact on Operation in 2020

Note: Please refer to the chapter content for details.

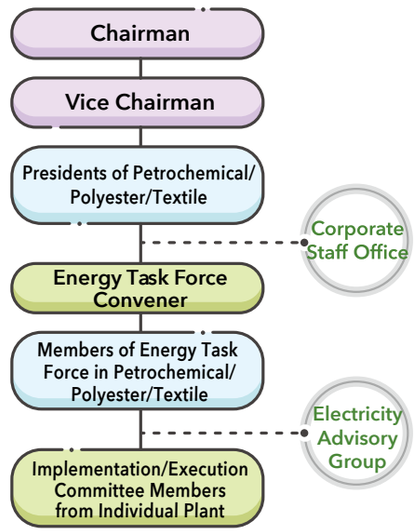
Strategies and Guidelines on Environmental Sustainabilit



Environmental and Energy Management Authority – Energy Task Force

FENC established the intercompany and interdepartmental Energy Task Force in 2010, and its scope of management has been expanding since then. Aside from energy management, the task force currently oversees the management of water resources, air pollutants, waste, GHG emissions and renewable energy. To track performance regularly, FENC built an online database, Management Platform of Energy Conservation, Carbon Reduction and Circular Economy. In 2018, FENC established company-wide reduction targets. As the Company expands its territory, the Energy Task Force have also expanded its scope of management from production sites in Taiwan and China to Vietnam, Japan, the U.S. and Malaysia.

Organizational Structure



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Special Budget for Energy Reduction and Environmental Protection

To implement projects on energy reduction and environmental protection and to fulfill environmental sustainability, FENC sets special budgets aside to further the cause. In 2010, NT$2 billion was appropriated for the special energy reduction budget. Since 2018, FENC has carried out 212 projects during phase II of the special budget for energy reduction. Total budget appropriated has amounted to NT$1.94 billion. For more details on the performance of the special budget, please refer to the section on "Measures and performance in energy and carbon reduction" under 3.1.1 Energy Management.

Internal Energy Efficiency Incentives

In the continuing pursuit of breakthroughs in energy reduction, FENC must foster interactions and exchange among its affiliates, and learn from industry peers to inspire higher technological achievements that will increase energy efficiency. FENC awarded the first Far Eastern Group Energy Conservation Award in 2005. The award gives recognitions to exemplary energy saving performance and technology, and encourages consistent implementation of energy saving projects to control energy costs. The project of excellence for the 2020 Far Eastern Group Energy Conversation Award went to Hsinpu Chemical Fiber Plant's cogeneration plant project, an achievement applauded by the entire Far Eastern Group.

3.1 Elevating Energy and Resource Efficiency

3.1.1 Energy Management

Management Guidelines and Measures

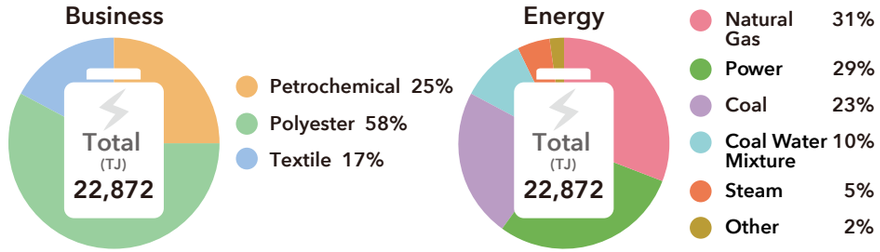
System Establishment and Management
- Expanding ISO 14001 and ISO 50001 management systems
- Optimizing management system and Energy-saving performance included in the reward system
- Conducting training and promotion

Incorporation of Innovative Technology and Facilities
- Applying AI toward energy management
- Constructing new cogeneration plants
- Implementing energy and carbon reduction projects

Avid Support for Governmental Policies
- Achieving 1% annual energy saving rate, which exceeds governmental requirement
- Green energy establishment and purchasing guidelines under Renewable Energy Development Act

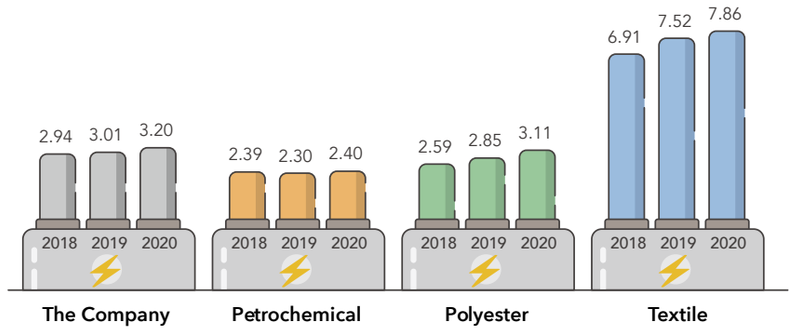
Energy consumption per unit production went up by 3% in 2020. The increase is caused by declining production due to COVID-19 at a few production sites. In addition, the new production sites are still conducting pilot runs, and energy consumption is yet to stabilize, causing an overall increase in energy consumption per unit production. Total energy consumption increased by 9% comparing to the previous year because of higher production capacity in Polyester Business.

2020 Energy Consumption



Energy Consumption Per Unit Production

Unit: GJ/metric ton of product



Note: The Textile Business does not include FEAZ, FEAV and FENV.

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Energy Consumption

Unit: TJ

		Petrochemical			Polyester			Textile			Total		
		2018	2019	**2020**	2018	2019	**2020**	2018	2019	**2020**	2018	2019	**2020**
Power	Purchased Power	875	1,234	**1,274**	3,048	3,488	**3,890**	1,971	1,919	**1,697**	5,894	6,641	**6,861**
	Purchased Green Power	0	0	**0**	1	1	**1**	0	0	**0**	1	1	**1**
	Self-generated Green Power	0	2	**3**	4	5	**11**	30	29	**32**	34	36	**46**
	Electricity	**875**	**1,236**	**1,277**	**3,053**	**3,494**	**3,902**	**2,001**	**1,948**	**1,729**	**5,929**	**6,678**	**6,908**
Natural Gas		3,264	4,645	**4,398**	1,366	1,694	**2,226**	810	789	**688**	5,440	7,128	**7,312**
Heavy Oil		0	0	**0**	397	240	**266**	72	60	**43**	469	300	**309**
Fuel Oil		0	0	**0**	0	1	**3**	0	0	**0**	0	1	**3**
Coal		0	0	**0**	1,071	2,924	**4,364**	338	975	**1,100**	1,409	3,899	**5,464**
Coal Water Mixture		11	0	**0**	2285	2257	**2246**	106	125	**103**	2,402	2,382	**2,349**
Steam		0	0	**0**	337	341	**323**	400	277	**204**	737	618	**527**
Total		**4,150**	**5,881**	**5,675**	**8,509**	**10,951**	**13,330**	**3,727**	**4,174**	**3,867**	**16,386**	**21,006**	**22,872**

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. 4. The energy consumption of APG Polytech has been counted since July 2019.

System Establishment and Management

As FENC expands, so does the coverage of ISO 14001 and ISO 50001 on environmental and energy management systems. The Company devotes ongoing efforts in optimizing the management systems to enhance energy and carbon reduction. Production sites at some locations have established Regulations Governing Rewards for Energy Efficiency to encourage all employees to participate in energy reduction campaigns.

Environmental and Energy Management Certification Passed at Production Sites

	Sites with Certifications	Coverage Rate of Production Sites
ISO 14001 Environmental Management Systems	Hsinpu Chemical Fiber Plant, Kuanyin Chemical Fiber Plant, OGM, Kuanyin Dyeing and Finishing Plant, OPSC, FEIS, WHFE, FIGP NEW, OTIZ, FEDZ, FEAV, FENV, Polyester Plant of FEPV, textile plant of FEPV, Headquarters	64%
ISO 50001 Energy Management Systems	Plant 2 of OPTC, Hsinpu Chemical Fiber Plant NEW, Kuanyin Chemical Fiber Plant NEW, Kuanyin Dyeing and Finishing Plant NEW, Hukou Mill, OPSC, FEIS NEW, FEIW, Headquarters	41%

Incorporation of Iinnovative Technology and Facility

The age of AI is progressing rapidly, and FENC has devoted considerable efforts into developing AI applications. To implement digital transformation, Industry 4.0 was incorporated into Plant 2 of OPTC during the construction stage. With a smart platform as the core, the system is part of a brand new smart factory. Its production process entails VR training; smart electronic inspection; smart logistics management; electronic safety and energy bulletin; wall screen surveillance system. The plant also utilizes AI to improve quality forecast and energy efficiency.

Avid Support for Governmental Policies

Bureau of Energy, Ministry of Economic Affairs mandates 1% energy saving rate for major energy users. This mandate has been extended to 2024. Production sites in Taiwan have abided by this requirement, and in the past 6 years, their energy saving performance have exceeded government expectation.

Energy Saving Rate at Production Sites in Taiwan

	2015	2016	2017	2018	2019	**2020**
Energy Saving Rate	1.9%	2.3%	2.0%	2.0%	2.1%	**1.4%**

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Artificial Intelligence

Proactive Energy Control with AI

OPTC developed AI applications for active energy management, a first among industry peers. The project is a 2-phased collaborative effort with Academia Sinica. Phase I involves the collection and processing of energy-related operational data. The processed data is applied toward establishing AI energy baseline (EBL) using RapidMiner. With a period of multi-faceted in-depth discussions, the team cleared away several issues, demonstrating patience and professionalism that perfected the system. OPTC delivered an impressive debut on its first try at AI. During the process, the plant also acquired the ability to develop AI applications with ownership of the source code and the know-how, which can be expanded toward high-level production control, operational optimization as well as warning for malfunctioning equipment. The plant will continue to utilize the technology to improve production efficiency and reduce operating costs.

OPTC Initiates the Future of AI, Controlling Quality and Energy Consumption Intelligently

AI Assistant for Energy Efficiency

FEFC collaborates with Yuan-Ze University to develop AI applications based on data collected from the public cooling tower. The AI model assists operators of public facilities in decision making when it comes to equipment operation and allocation, which reduced energy loss caused by human errors. Comparing to the previous year, energy consumption from the cooling fans and pumps decreased by 79,710 kWh; daily makeup water is reduced by 16.3 kL, which saves NT$225,924 in costs. With the AI assistant, FEFC has accomplished both energy and water saving goals.

Digitization of Textile Production

FEIW conducted an 18-month project that combines energy management, online monitoring and smart manufacturing in the textile industry. The project improves product quality, conserves manpower and reduces energy costs. The plant submitted technological development proposals for governmental incentives at multiple levels and received NT$5.56 million in subsidy. This project is in line with international trends on smart and green manufacturing. It also aligns with the technologically-oriented focus in the global textile industry.

Measures and Performance in Energy and Carbon Reduction

FENC's efforts in energy and carbon reduction continues in 2020 with 97 special projects aiming at facility improvement and targeting conservation of electricity.

2020 Energy and Carbon Reduction Projects

Production Improvement 28

Modifying production parameters, such as temperature, pressure and operating period.

Facility Improvement 46

Optimizing, upgrading and updating air conditioning, air pressure, boilers, power generators, motors, lighting as well as production equipment, such as installing low liquor ratio dyeing machine and replacing single-screw extruder with twin-screw extruder.

Energy Management 23

Revamping inverter air compressor, improving cooling system, adjusting operating hours and discontinuing operation.

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2020 Energy Conservation and Carbon Reduction Project

		Energy Conservation (TJ)	GHG Emissions Avoided (tCO_2e) Scope 1	Scope 2
Project	Improvement on Production Process	316	366	43,945
	Improvement on Equipment	145	0	21,124
	Energy Management	96	0	13,520
Business	Petrochemical	6	0	909
	Polyester	503	366	70,803
	Textile	48	0	6,877
Total		**557**	**366**	**78,589**

Note:
1. Performance on energy conservation is an estimate derived from comparison to pre-project energy conservation with original production process and equipment.
2. The calculation of heating value is based on the heating value coefficients from all production sites.
3. GHG emission factors: GHG emission factors in Taiwan are based on "GHG Emission Factors" version 6.0.4 from Bureau of Energy, MOEA and Environmental Protection Administration. GHG emission factor for electricity is 0.509 tCO_2e/1000 kWh, 3.02468 tCO_2e/t for heavy oil. Calculation of GHG emission factors for electricity in China is based on the local electrical grid. The GHG emission factor in China for electricity is 0.7035 tCO_2e/1000 kWh.
4. Scope 1 includes heavy oil; Scope 2 includes purchased electricity.
5. GHG includes CO_2, CH_4, N_2O, PFCs, HFCs, SF_6 and NF_3.

Energy Conservation and Carbon Reduction Projects

	2018	2019	2020
Actual Investment (NT$1,000)	454,498	127,361	**61,959**
Savings (NT$1,000)	143,379	50,078	**40,958**
Energy Conservation (TJ)	659	498	**557**
GHG Emissions Avoided (tCO_2e)	89,195	74,151	**78,955**

Steam

Condensate Recovery with New Slurry Preheater

At Plant 2 of OPTC, the TA slurry used during purification is preheated in multiple stages. The heating sources include flash evaporation and condensate, which are produced in the crystallizer. With improvement measures, the system is capable of capturing residual heat from the condensate at approximately 160°C. The TA slurry is heated to 125°C before being sent to the preheater where temperature rises to 136°C. The system increases preheating temperature by 6°C, thus reducing the use of high-pressure vapor for heating, as well as natural gas consumption at the boilers. The improvement saves approximately 18,363 metric tons of high-pressure vapor annually, and NT$14.6 million in costs.

On-site facility

Electricity

Cogeneration Plant Upgrade

Birdseye view of the new cogeneration plant

The cogeneration plant at Hsinpu Chemical Fiber Plant was inaugurated in 1985. After 24 years of non-stop operation, the facility is now dated and extremely energy intensive. With boilers running at 86% energy efficiency, the plant is not functioning at its optimal level. To ensure consistent energy supply for the production units, the plant is equipped with the most energy efficient equipment from Japan, Europe and the U.S. The plant also utilizes visualization module, control system and total productive maintenance (TPM) to improve operational reliability and plant-wide energy efficiency. The plant aims to build a smart manufacturing plant with maximum performance and minimal energy consumption as well as carbon emissions. The new cogeneration plant was completed in 2019 and the energy efficiency for boilers has jumped to 92.5%. In March 2020, the cogeneration plant was approved by the Ministry of Economic Affairs. After Ministry of Economic Affairs conducted on-site inspection as required in Energy Utilization Manual in July, Hsinpu Chemical Fiber Plant is now a government certified energy efficient plant.

Air-Cooled Heat Exchanger

FEIS used to rely solely on water-cooled heat exchanger for cooling, and maintaining consistent operation is quite energy intensive. In 2020, FEIS purchased an air-cooled heat exchanger, which is equipped with 4 fans. The new heat exchanger cools the process fluid by introducing ambient air and allowing heat to transfer from the hot fluid to the cool air. With a hybrid arrangement of air-cooled and water-cooled heat exchangers, both may serve as a fall back. Since air-cooled heat exchanger cools processing fluid with ambient air, there is no need for cooling tower, pump and pipelines, making the device low-maintenance; high in efficiency; water and energy efficient. The upgrade has saved NT$27.09 million in annual energy costs.

Energy Efficiency for Cooling Pump

Plant 2 of OPTC collaborates with its suppliers and Academia Sinica to examine the operation of the cooling pump at the processing area and determine actual needs. The plant recalibrated the flowmeters based on the analysis, and noticed that the total cooling water flow is higher than the system design. This is an opportunity for energy reduction. The plant conducted hydraulic and energy analysis to accomplish this goal, and decided to switch to high-efficiency pumps. Three cooling pumps were added and variable-frequency drive for motors was installed to regulate pump operation. The improvement reduced 124 kWh of power consumption per hour, 990 MWh per year, and saves NT$2.48 million in costs.

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3.1.2 Raw Material Management

FENC monitors raw material usage consistently and dedicates efforts in the improvement of production process and techniques. We introduce innovative technology and system, ensuring sound management and improve the efficiency use and recycling of raw materials. We also expand the power of influence by forming an alliance with suppliers and customers, pledging to protect the environment by optimizing packaging methods.

Raw Material Management Guidelines and Measures

System Establishment and Management	Incorporation of Innovative Technology and Facilities	Value Chain Collaboration
• Conducting training on raw material management • Establishing management system regarding hazardous materials • Setting recycling targets for packaging materials and regularly monitoring completion rate • Improvement mechanism targeting the use of raw materials	• Incorporating smart scheduling system and reducing wear and tear with optimized scheduling • Building smart quality forecast model with AI to reduce defect rate	• Implementing supplier evaluation to improve the quality of raw materials • Reinventing packaging materials and design • Coordinating with customers on ways of simplifying product packaging • Sharing success stories on the recycling of packaging materials with customers and suppliers

We pay meticulous attention to the packaging materials for our products and give priority consideration to environmentally friendly materials. We also avoid overpackaging and recycle used packaging materials. In addition to recycling within the plant, we collaborate with licensed recycling companies, which recycle packaging materials from the domestic customers, treat them and deliver them back to the production sites in reusable condition. In 2020, there were no oil, fuel and chemical leakages. We have a long established recycling management system. By providing customers incentives and engaging in continuous dialogue, we convinced them to help us recycle packaging materials such as pallets, paper tubes and pegboards. In 2020, the average recycling rate for packaging materials at all production sites is 69%, which is up by 5 percentage points from the previous year.

To minimize the use of packaging materials, OGM started using baffled bulk bags for product delivery since 2019 and encourages the recycling of these bags. Those that cannot be reused are stored separately before being collected by recycling companies. The recycling and reuse practices are a demonstration of the circular economy concepts. OGM no longer uses pallets and increases the capacity of tank trucks in order to reduce packaging materials. FEIS recycles the pallets and repairs damaged ones in house. Therefore, FEIS did not purchase any new pallets in 2020. The polyester plant of FEPV trains all on-site employees on ways of avoiding losing the PE film that covers the textile trolley during delivery, and designates staff to be in charge of recycling, bring the 2020 recycling rate to 81.4%.

Maximizing the Value of Pallets and Packaging Materials Through Recycling

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
17 PARTNERSHIPS FOR THE GOALS

WHFE is shipping textile films for domestic customers in recycled pallets. The plant also repairs pallets that came with shipments of raw materials or modifies them for the delivery of its own products. Working with licensed recycling companies, WHFE recycles packaging materials from the domestic market, and reuses them after cleanup. In 2020, 60% of the wooden pallets were recycled, which reduces NT$2.31 million in costs. The PP bags that came with shipments of raw materials are recycled and reused by FEIS. All new bags are used at least twice, and the recycling rate for raw material packaging has reached 82%.

Supplier Collaboration on Recycling Packaging Materials

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
17 PARTNERSHIPS FOR THE GOALS

To reduce waste, minimize deforestation and protect the natural habitat, FEIS provided audit and coaching for suppliers in 2020 to improve the quality of packaging materials. FEIS encourages suppliers to minimize the use of packaging materials, switch from small to large packages, and target the recycling and reuse of wooden pallets and PP bags. FEIS gives priority consideration to environmentally friendly materials, focusing on recycling and reuse, and avoiding over packaging. Each month, the plant quantifies the recycled materials, recycling rate and completion rate, and reviews unmet goals. The recycling mechanism has prolonged the life cycle of packaging materials, and in turn reduced waste as well as costs. We commission licensed recycling companies to recycle packaging materials from the domestic market. Without compromising quality and customer satisfaction, we convinced customers to accept shipment in recycled bags that are in reusable condition. In terms of effectiveness, Staple Fiber Unit improved the recycling rate of wooden pallets from 60% to 70%. The unit also repairs damaged PP bags for reuse, increasing the recycling rate of from 98% to 100%. Staple Fiber Unit recycles carton boxes and wooden pallets from customers. Through production-marketing coordination, the unit reduces the use of wooden pallets during product delivery.

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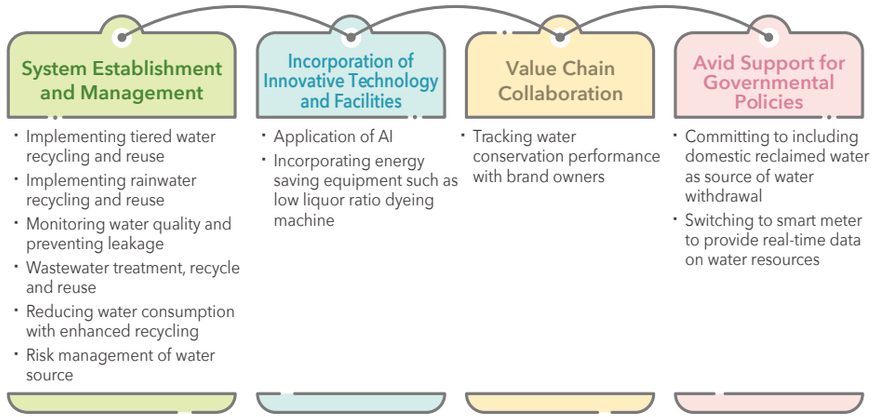
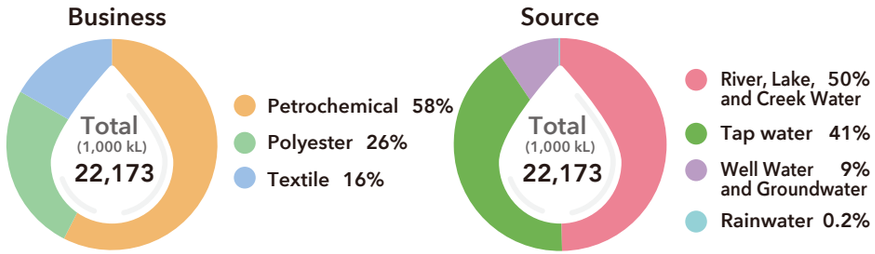
3.1.3 Water Resources Management

Water Resources Management Guidelines and Measures



FENC regards water as a shared resource. We value local water resources and their surrounding environment at all production sites. We have established reduction goals and continue to reduce water withdrawal and consumption per unit production. Working with our customers, we strive to mitigate the depletion of water resources. When planning for water withdrawal, we take governmental policies, corporate development and industry evolvement into account. We also consider the needs of local residents, managing and distributing water resources in a reasonable and effective manner to avoid the depletion of resources. We do not pose any negative impacts on local residents and natural habitats in terms of the quantity and the approach of water withdrawal.

Water Withdrawal in 2020



Water Withdrawal and Water Consumption

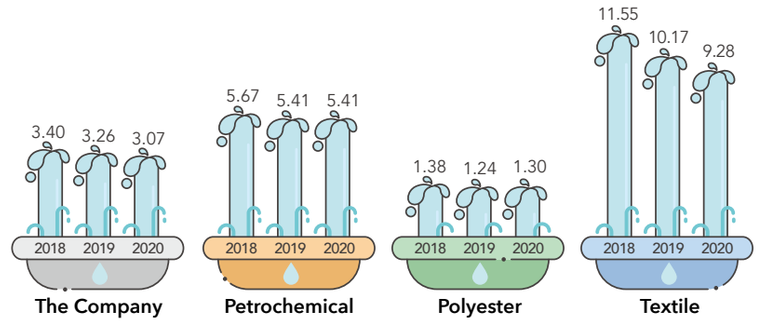
Unit: 1,000 kL

	Petrochemical			Polyester			Textile			Total		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Surface Water	3,467	7,526	**6,690**	1,280	1,404	**2,013**	3,095	3,124	**2,406**	7,842	12,054	**11,109**
Third-party Water	6,340	6,292	**6,077**	1,882	1,793	**1,855**	1,475	1,191	**1,169**	9,697	9,276	**9,101**
Groundwater	15	0	**2**	1,733	1,919	**1,848**	152	121	**68**	1,900	2,040	**1,918**
Rainwater	22	13	**13**	0	0	**0**	137	68	**32**	159	81	**45**
Total Water Withdrawal	**9,844**	**13,831**	**12,782**	**4,895**	**5,116**	**5,716**	**4,859**	**4,504**	**3,675**	**19,598**	**23,451**	**22,173**
Total Water Consumption	**5,357**	**7,483**	**6,737**	**2,351**	**2,481**	**2,841**	**1,626**	**1,226**	**578**	**9,334**	**11,190**	**10,156**

Note:
1. Water consumption refers to the difference between water withdrawal and wastewater discharge. The main cause for water consumption is evaporation at the cooling tower. Additonally, water consumption also occurs during the production process.
2. Total dissolved solids (TDS) in all categories of water withdrawal are under 1,000 mg/L.
3. Surface water source including river, lake and creek water; third-party water source is mainly tap water; groundwater source including well water and all groundwater taken in plants are renewable groundwater.

Water Withdrawal Per Unit Production

Unit: kL/metric ton of product



Note: The Textile Business does not include FEAZ, FEAV and FENV.

In 2020, the total water withdrawal was down by 5% comparing to the previous year. Total water consumption also dropped by 9% largely due to lower production in Petrochemical and Textile Businesses, resulting in lower water demand. Comparing to 2019, water withdrawal per unit production also dropped by 9%. FEDZ, which is under Textile Business, implemented several water conserving measures, including the replacement of 31 low liquor ratio dyeing machine. The measures delivered noticeable results. In 2020, water withdrawal for Textile Business was reduced by 18%.

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Water Saving Measures and Performance

The focus for FENC is on reducing drift and evaporation loss at the cooling tower, and controlling the production process to improve the cycle of concentration and reduce water consumption. Examples include the energy saving device installed for the cooling tower at FEDZ, which chills hot return water from 55°C to 35°C. Prior to installing the device, 1000kL of hot return water is discharged daily as wastewater. The temperature decrease means no hot return water is discharged, which is a remarkable improvement.

Outcome of Water Saving Project in 2020

	Investment (NT 1,000)	Water Saved (kL/year)	Percentage to Water Withdrawal
Petrochemical	26,856	711,360	6%
Polyester	10,906	237,041	4%
Textile	10,658	436,142	12%
The Company	**48,420**	**1,384,543**	**6%**

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

Water Recovery and Reuse

Recycled and reused water increased by 2% in 2020, and the recycling rate stays on par with the previous year at 98%. The recycling rate of circulated water, which is not included in the aforementioned recycling rate, is 32%. Jumping by 1 percentage point from the previous year, it is an impressive testimony to the Company's water conservation efforts.

Water Recycled and Reused

Unit: 1,000 kL

		Petrochemical			Polyester			Textile			Total		
		2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Circulating Water	Cooling Water	568,526	774,541	**728,309**	398,736	403,432	**476,094**	36,155	34,732	**34,858**	1,003,417	1,212,705	**1,239,261**
	Others	12,853	7,527	**10,994**	1,237	974	**893**	0	0	**0**	14,090	8,501	**11,887**
Recycled Water	Recycled Water Excluding Reclaimed Water	376	4,956	**4,943**	788	725	**896**	3,134	1,865	**997**	4,298	7,546	**6,836**
	Reclaimed Water	1,377	1,988	**2,083**	186	182	**154**	2,249	1,322	**928**	3,812	3,492	**3,165**
Others		433	667	**292**	0	85	**0**	0	0	**0**	433	752	**292**
Total Water Recycled and Reused		**583,565**	**789,679**	**746,621**	**400,947**	**405,398**	**478,037**	**41,538**	**37,919**	**36,783**	**1,026,050**	**1,232,996**	**1,261,441**

Note:
1. Circulating water refers to used water that is not discharged, but applied back to the original circulation and reused.
2. Recycled water refers to used water that is discharged out of the original circulation, but then recovered and reused.
3. Other circulating water includes water from the boiler, production process, turbine condensate and low pressure condensate. The circulating water at Hsinpu Chemical Fiber Plant and OPTC is from the boiler; circulating water at OPTC and WHFE is recovered from the production process; turbine condensate and low pressure condensate are sources of circulating water at OPSC.
4. The "Other" category includes produced water which enters the company premise as a result of the production process.

Water Recycling Rate

	2018	2019	2020
Petrochemical	98%	98%	**98%**
Polyester	99%	99%	**99%**
Textile	90%	89%	**91%**
The Company	**98%**	**98%**	**98%**

Note: Water recycling rate = total water recycled and reused ÷ (total water withdrawal + total water recycled and reused) × 100%

Water Recycling Rate (Excluding Circulating Water)

	2018	2019	2020
Petrochemical	18%	35%	**36%**
Polyester	17%	16%	**16%**
Textile	33%	31%	**34%**
The Company	**22%**	**31%**	**32%**

Note: Water recycling rate (excluding circulating water) = (total water recycled and reused – circulating water) ÷ (total water withdrawal + total water recycled and reused – circulating water) × 100%

Rainwater Rrecycling

6 CLEAN WATER AND SANITATION

In 2020, FEAV placed rainwater storage tanks strategically based on the locations of restrooms and canteens. Each tank is connected with 2 pipes, 1 for tap water and 1 for rainwater. The plant utilizes rainwater first for purposes such as flushing the toilets, watering plants and cleaning canteen floors. Tap water is not used until the rainwater runs out for conservational purposes. Water usage in the second half of 2020 is 25% lower comparing to the first half of the year. FEAV will continue to increase the use of rainwater storage tanks in 2021. It is anticipated that the plant will be able to recycle and reuse 43 kL of water per day in the future.

Rainwater storage tank

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Returning Water to Local Residents – OPTC's Water Reclamation Contract

6 CLEAN WATER AND SANITATION 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

The water level of Shihmen Reservoir hit a historic low in 2020. In face of severe water shortage, Taoyuan North District Water Resources Recycling Center is implementing the water reclamation project. To support governmental policy, OPTC pledges to utilize reclaimed water despite its higher costs. On October 13th, 2020, OPTC signed a contract with Taoyuan City Government as a promise to use reclaimed water and a pledge of support circular economy. Phase I is scheduled to be completed in 2024. By then, OPTC will be able to utilize approximately 15,000 kL of reclaimed water per day.

Eric Chueh, President of OPTC indicated that environmental protection and occupational safety have long been a priority at OPTC. Using reclaimed water is a sign of progress in a society. To achieve circular economy and environmental sustainability, OPTC eagerly dedicates efforts into the reclaimed water project. Though this means paying higher costs, it is a significant step towards the preservation of water resources. OPTC hopes to work more closely with Taoyuan City Government in the future to mitigate water shortages in the city, alleviate pressure on the water supply and bring positive influence in environmental protection.

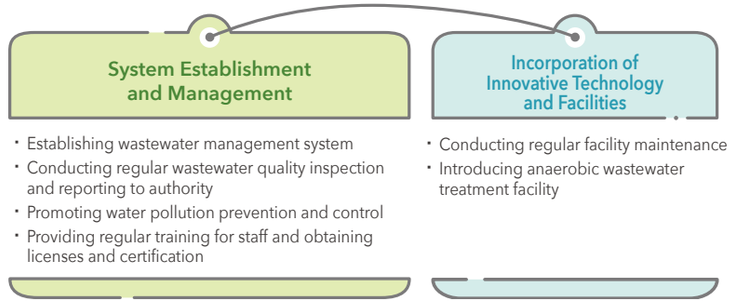
Upgrading Water Recycling Technology and Increasing Recycled Cecycled Water

6 CLEAN WATER AND SANITATION 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

The Staple Fiber Unit at Hsinpu Chemical Fiber Plant installed a new recycling tank in 2020 and modified the pipes. The overflow pipe and discharge pipe from the water tray for the rollers of stretching machine DS 1 are connected to the recycling tank to control water quality and wastewater quantity during production. In the past, the water tank requires approximately 170 kL of water a day. The modification reduced the water consumed to 128 kL a day, saving 42 kL daily, and approximately NT$710,000 a year.

Wastewater Discharge Management

Management Guidelines and Measures



The management of wastewater discharge at FENC encompasses 3 aspects:

1. Source management: Modify and optimize the production process to reduce oil and surfactant discharge.

2. Treatment efficiency management: Replace dated equipment and install smart control system.

3. Environmental impact management: Continue to build wastewater treatment facilities that reduce noise, odor and pollution to improve the quantity of recycled water and to actualize the recycling and reuse of natural resources.

The Company has a comprehensive wastewater treatment standards and SOP in place to treat the wastewater discharge. With established treatment procedure, wastewater quality is regularly tested for pollutants to ensure compliance with governmental standards. The Company also obtains industrial wastewater discharge permit prior to discharging into water bodies where permitted. Wastewater from FENC is not utilized by any other organizations.

Incorporation of Innovative Technology and Facility

FENC consistently innovates and upgrades wastewater treatment facilities to reduce wastewater discharge. For instance, the Company has installed modified upflow anaerobic sludge bed (UASB), in which the anaerobic system is capable of treating wastewater with higher chemical oxygen demand (COD) to lessen the load of the aerobic process that follows. The technology stabilizes wastewater quality and increase recycled wastewater. In 2020, FEIS installed UASB to improve the performance of the anaerobic treatment. The plant also replaced the aerobic septic system, added membrane bioreactor (MBR) and enhanced wastewater treatment with antimony removal technology. These measures reduce the turbidity of the reclaimed water, hence improving the recycling process and the reuse of water resources.

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Wastewater Discharge Sites

	Production Site	Wastewater Treatment and Discharge Site
Petrochemical	OPTC	Wastewater goes through biotreatment internally (deep shaft aeration and anaerobic treatment). Once reaching effluent standards, it is discharged into Shulin and Dajue Rivers.
	OPSC	Wastewater is treated internally until reaching the required standards, and then discharged through the municipal pipelines to Fengxian District East Wastewater Treatment Plant. Once fully treated, the wastewater is discharged into Hangzhou Bay.
Polyester	Hsinpu Chemical Fiber Plant	Wastewater goes through biotreatment internally. Once reaching effluent standards, it is discharged into Fengshan River.
	Kuanyin Chemical Fiber Plant	Wastewater goes through biotreatment internally. Once reaching effluent standards, it is discharged into Shulin River.
	FEFC	Industrial and domestic wastewater goes through biotreatment (contact oxidation) and sedimentation internally. Once the water reaches the effluent standards, it is discharged into Shulin River.
	OGM	Wastewater is first treated in house. Once reaching the effluent standards, it is discharged to the wastewater treatment plant in the industrial park for further treatment, and then discharged into Shulin and Dajue Rivers.
	FEIS	Wastewater is treated internally until reaching the required standards, and then discharged through the municipal pipelines to Fengxian District East Wastewater Treatment Plant. Once fully treated, the wastewater is discharged into Hangzhou Bay.
	WHFE	Treated in the internal wastewater treatment facility first, the wastewater then goes through the municipal wastewater treatment facility. Once fully treated, it is discharged into the Yangtze River.
	FEPV	Wastewater is treated internally until reaching the required standards (through online testing), and then discharged into ecological pond no. 1 in Bau Bang Industrial Park. Once fully treated, the water is discharged to Thị Tính River.
	FIGP	Wastewater is treated internally until reaching the required standards and then discharged to Tone River.
	APG Polytech	Wastewater is treated internally until reaching the required standards and then discharged to Ohio River.
Textile	Kuanyin Dyeing and Finishing Plant	Wastewater is treated in house, discharged to the wastewater treatment plant in the industrial park for further treatment, and then discharged into Shulin River.
	Hukou Mill	Wastewater goes through biotreatment (oxidation and aeration) internally and then discharged into Desheng River.
	OTIZ	Wastewater is treated internally until reaching the required standards, and then discharged through municipal pipelines to Hedong Wastewater Treatment Plant. Once fully treated, the water is discharged to the Jing-Hang Grand Canal. Starting in 2019, data collected are actual measurements instead of estimates.
	FEIW	Wastewater goes through Wuxi municipal sewage pipelines to the wastewater treatment facility. Once treated, the water is discharged into the Jing-Hang Grand Canal.
	FEDZ	Wastewater is treated internally until reaching the required standards, and then discharged through municipal pipelines to Hedong Wastewater Treatment Plant. Once fully treated, the water is discharged to the Jing-Hang Grand Canal.
	FEAZ	Wastewater is treated internally until reaching the required standards, and then discharged through municipal pipelines to Chengnan Wastewater Treatment Plant. Once fully treated, the water is discharged to the Jing-Hang Grand Canal.
	FEAV	Wastewater is treated at the treatment center within the industrial park and then discharged to Saigon River.
	FENV	Wastewater is treated at the treatment center within the industrial park and then discharged to Song Be River.
	FEPV	Wastewater is treated internally until reaching the required standards (online monitoring), discharged to the wastewater treatment plant in the the No. 1 ecological pond of Baopeng Industrial Zone, and finally discharged to the Thị Tính River.

Note:
1. There is no significant impact from wastewater discharge on the water bodies and related habitat.
2. Wastewater at OPSC includes wastewater from the manufacturing process, domestic wastewater, lab wastewater and wastewater from the cooling tower. Wastewater at Hsinpu Chemical Fiber Plant, Kuanyin Chemical Fiber Plant, FEFC and FEIS is from the manufacturing process, cooling tower, domestic wastewater and cleaning water. Wastewater at OGM, WHFE, FEDZ the polyester plant of FEPV and APG Polytech is from the manufacturing process, domestic wastewater and lab wastewater. Wastewater at Kuanyin Dyeing and Finishing Plant, OTIZ and FENV is from the manufacturing process and domestic wastewater. Wastewater at OPTC is from the manufacturing process and the cooling tower. Wastewater at Hukou Mill, FEIW, FEAZ and FEAV is from domestic wastewater. Wastewater at the textile plant of FEPV and FIGP is from manufacturing process.
3. Total wastewater volume includes domestic wastewater. The domestic wastewater was 494,000 kL in 2018, 638,000 kL in 2019 and 636,000 kL in 2020.
4. Calculation of wastewater at Hukou Mill also includes the Biomedical Business Unit of Oriental Resources Development Limited.
5. Minimum wastewater discharge standards have been established at all production sites in accordance with local regulations and industry characteristics.

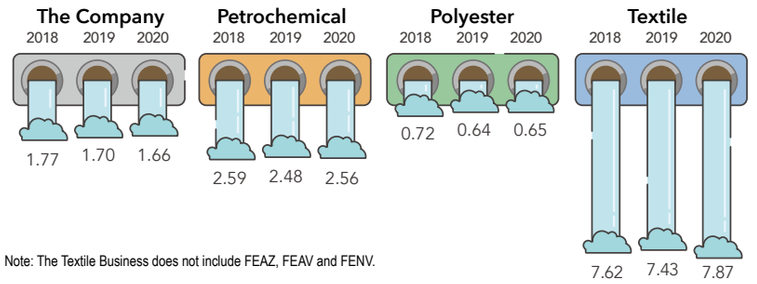
Wastewater Discharge Volume

Unit: 1,000 kL

	Petrochemical			Polyester			Textile			Total		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Freshwater (≤1,000 mg/L Total Dissolved Solids)	0	0	**0**	1,368	1,416	**1,385**	1,134	869	**720**	2,502	2,285	**2,105**
Other Water (>1,000 mg/L Total Dissolved Solids)	4,487	6,348	**6,045**	1,176	1,219	**1,490**	2,099	2,409	**2,377**	7,762	9,976	**9,912**
Total Discharge Water	**4,487**	**6,348**	**6,045**	**2,544**	**2,635**	**2,875**	**3,233**	**3,278**	**3,097**	**10,264**	**12,261**	**12,017**

Wastewater Volume Per Unit Production

Unit: kL/metric ton of product



Note: The Textile Business does not include FEAZ, FEAV and FENV.

Comparing to 2019, total wastewater discharge is reduced by 2%, and discharge per unit production is reduced by 5%. FENC's production sites are committed to increasing the reuse of water resources. Among them, FEAV enhanced the management of the water supply system, amending deficiencies in the water meter network and monitoring water usage in all areas. As a result, wastewater discharge reduced by 34% comparing to the previous year. All wastewater from the production process at OTIZ is recirculated and reused by the plant. In 2020, the only source of discharge is domestic wastewater. Total wastewater discharged was reduced by 65%.

Water-Risk Management

Climate change has altered the distribution of water resources, and maintaining water masses and water quality requires urgent attention from the global community. FENC has taken stock of Company sites exposed to water stress. Based on World Resource Institute's Aqueduct Water Risk Atlas, a publicly available tool of local-level water risk indicators, OTIZ, FEDZ and FEAZ are located within water risk areas. Hence, FENC is targeting the management of water resources for Company sites within water risk areas and has set management goals. By gaining more understanding of the social and environmental impacts on local communities, the Company is able to respond properly and protect water resources.

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Water withdrawal at water risk areas dropped by 23% in 2020, and water consumption declined by 10%. The noticeable decrease underscores FENC's devotion to and performance in water resources management. The Company will continue to use and allocate water resources more efficiently and rationally to enhance sustainability.

Water-Risk Area Water Withdrawal and Water Consumption

Unit: 1,000 kL

	2018	2019	2020
Surface Water	1,802	1,054	**647**
Third-Party Water	487	291	**414**
Rainwater	131	65	**24**
Total Water Withdrawal	**2,420**	**1,410**	**1,085**
Total Water Consumption	**469**	**456**	**411**

Note:
1. The scope of data collection includes 3 production sites in Suzhou, China. According to the water quality tests, total dissolved solids (TDS) across the water withdrawal categories are under 1,000 mg/L.
2. Surface water source including river, lake and creek water; third-party water source is mainly tap water.

Water-Risk Area Wastewater Discharge Volume

Unit: 1,000 kL

	2018	2019	2020
Freshwater (≤1,000 mg/L Total Dissolved Solids)	452	189	**134**
Other Water (>1,000 mg/L Total Dissolved Solids)	1,498	764	**540**
Total Discharge Water	**1,950**	**953**	**674**

Note: The scope of data collection includes 3 production sites in Suzhou, China. According to the water quality tests, all wastewater is treated internally until reaching the required standards, and then discharged through municipal pipelines to Chengnan Wastewater Treatment Plant. Once fully treated, the water is discharged to the Jing-Hang Grand Canal.

Reducing Water Softener Regeneration by Increasing Cycle of Concentration

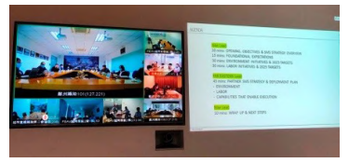
6 CLEAN WATER AND SANITATION 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

OTIZ focuses on reducing the consumption of tap water and soft water. The plant replaced underground conduits with exposed system to make it easier for inspection and maintenance. Each month, designated personnel compile and review statistics on all water withdrawal categories, and optimize the efficiency of equipment with high water consumption. In reference to the soft water, OTIZ increases the cycle of concentration at the cooling tower to reduce water softener regeneration, and increases reclaimed water through the concentrate from reverse osmosis system. The modifications delivered noticeable results by reducing tap water usage at the southern portion of the plant by 46% in 2020; soft water usage by 8%.

Strengthening Stakeholder Dialogue to Protect Water Resources

6 CLEAN WATER AND SANITATION 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 14 LIFE BELOW WATER

Water resources issues are high on FENC's priorities. The Company has increased its investments in water infrastructure for the 3 production sites located within water risk areas to improve efficiency. In addition, the Company takes actions toward strengthening stakeholder dialogue. By working together, we can build a solid foundation for the sustainability of water resources.



Sharing water conservation techniques during teleconferencing

In 2020, FEDZ and FEAZ met with Nike and governmental authority on water conservation. The meeting fostered mutual growth with FEDZ and FEAZ sharing water conservation techniques with industry peers.

In Suzhou, governmental authorities across all levels (district, municipal and provincial) conducted Water Conservation Enterprise and Water Efficiency Leader campaigns. OTIZ won the title of Water Conservation Enterprise in 2019; Suzhou Water Efficiency Leader in 2020. The plant also received NT$900,000 from the government for winning the two titles. The encouragement makes OTIZ even more determined to improve water conservation techniques.

3.2 Responding to Climate Change

The impact of climate change and global warming is increasingly severe. To mitigate and adapt to the climate crisis, FENC implemented the project on TCFD Climate-related Financial Disclosure in 2019, using the TCFD framework to evaluate financial impacts on FENC sites due to climate change. For details on this assessment, please refer to 1.3 Perfecting Risk Management-Climate change risk management.

FENC has dedicated long-term efforts in corporate sustainability, advocating and implementing greenhouse gas (GHG) inventory control with site-specific reduction targets. We increase the use of renewable energy step by step and mitigate global warming caused by GHG emissions to ensure the sustainability of the natural habitat on earth.

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3.2.1 GHG Inventory

GHG Management Guidelines and Measures

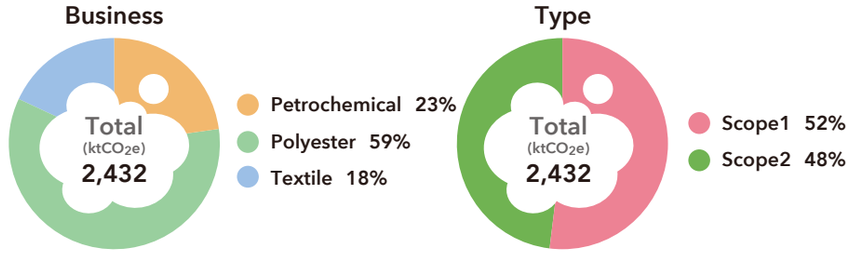
System Establishment and Management
- Conducting GHG emissions inventory check in accordance with ISO 14064-1 or local regulations
- Inspecting GHG emissions regularly and reporting to authority
- Conducting continuous implementation on GHG inventory
- Implementing GHG reduction targets continuously

Incorporation of Innovative Technology and Facilities
- Constructing solar power stations

Avid Support for Governmental Policies
- Increasing use of renewable energy
- Compliance with Greenhouse Gas Reduction and Management Act and Renewable Energy Development Act in Taiwan
- Complying with the carbon credit requirements set forth in Trial Procedures of Shanghai Municipality on Carbon Emission Administration

Production sites under FENC establish individual reduction targets specific to the industry and local governmental regulations. FEIW aims for 1% annual reduction in GHG emission; Hsinpu Chemical Fiber Plant and Kuanyin Chemical Fiber Plant aim for reaching 2%; the target for Kuanyin Dyeing and Finishing Plant is 2.5%; WHFE is striving for 1.5%. FEIS has set 2015 as the base year for carbon reduction targets of 15% by 2020; 35% by 2030. FEIS has exceeded the 2020 target with 21% reduction, and is on course for the 2030 target.

GHG Emissions in 2020



GHG Emissions

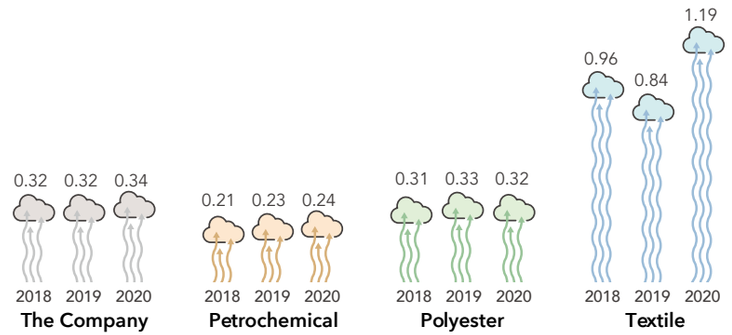
Unit: $ktCO_2e$

	Petrochemical			Polyester			Textile			Total		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Scope 1	221	391	**364**	427	470	**771**	48	45	**137**	696	906	**1,272**
Scope 2	149	203	**195**	610	570	**655**	337	288	**310**	1,096	1,061	**1,160**
Biofuel CO_2 Emission	14	15	**15**	0	0	**0**	0	0	**0**	14	15	**15**
Total	**370**	**594**	**559**	**1,037**	**1,040**	**1,426**	**385**	**333**	**447**	**1,792**	**1,967**	**2,432**

Note:
1. Scope of report: The 2018 statistics include Neili Texturizing Plant, while data collection for the 6 additional sites began in 2020.
2. Scope 1: direct emission includes CO_2, CH_4, N_2O, PFCs, HFCs, SF_6 and NF_3; scope 2 indirect emission includes CO_2, CH_4, and N_2O; total emission does not include CO_2 emission from biofuel.
3. OPSC and FEIS conform to SH/MRV-004-2012, which only CO_2 emission is calculated.
4. Production sites which have completed ISO 14064-1 standards for GHG inventories in 2018 included: Oriental Petrochemical (Taiwan), Hsinpu Chemical Fiber Plant, Kuanyin Chemical Fiber Plant, Kuanyin Dyeing and Finishing Plant, FEFC, Hukou Mill, OPSC, FEIS, WHFE.
5. Production sites which have completed ISO 14064-1 standards for GHG inventories in 2019 included: Oriental Petrochemical (Taiwan), Hsinpu Chemical Fiber Plant, Kuanyin Chemical Fiber Plant, OPSC, FEIS.
6. In 2020, the emission data of all production sites have been completed or are being verified by ISO 14064-1 and other inventory standards.
7. The total emission in 2020 for FENC's 4 production sites in Taiwan is 791 $ktCO_2e$.

GHG Emissions Per Unit Production

Unit: tCO_2e/metric ton of product



Note: The Textile Business does not include FEAZ and FEAV.

The 2020 GHG emissions increased by 24% due to the addition of 6 production sites in the scope of data collection. Among them, 4 are under Petrochemical Business and 2 under Textile Business. Emissions from the 6 sites reach 488 $ktCO_2e$. GHG emissions per unit production decreased by 6% for the year. However, with the addition of the polyester plant of FEPV, changes in product structuring led to an increase in GHG emissions per unit production under Textile Business in 2020.

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System Establishment and Management

All FENC production sites must comply with ISO 14064-1 or local regulatory standards on the quantification and reporting of GHG emissions. In addition, all locations must complete third-party auditing once every 3 years. Currently, 16 productions sites in Taiwan, China and Vietnam have completed the audit. In 2020, FENC took even more proactive approaches to tackle GHG emissions and launched a comprehensive GHG inventory plan, which encompasses 20 production sites in Taiwan, China, Vietnam, Japan and the U.S. The quantification and reporting of the inventory follow ISO 14061-1:2018 and the 3 scopes of emissions defined in GHG Protocol developed by World Business Council for Sustainable Development (WBCSD), and third-party auditing is expected to be completed in 2022.

Currently the inventory of indirect GHG emissions of FENC included staff business trips and waste treatment in the calculation. The scope of staff business trip covers the mileage of air travels from and to production sites in Taiwan and China. Calculation of carbon emission between the departure and arrival points is based on the air travel carbon calculator established by International Civil Aviation Organization (ICAO). The 2020 carbon emissions generated during staff business trips by air travel is 164 tCO_2e, 85% reduction from the previous year. The calculation for carbon emissions from waste disposal covers 16 production sites from Taiwan, China and Vietnam. The calculation of carbon footprint per ton per kilometer for waste disposal at production sites in Taiwan is based on the carbon footprint emission factors released by the Environmental Protection Administration. Calculations for production sites in China and Vietnam are based on the carbon footprint coefficient issued by State Administration for Industry and Commerce's website on carbon trading. In 2020, the annual CO_2 emission for waste disposal is 2,946 tCO_2e.

ISO 14064-1:2018 Training

7 AFFORDABLE AND CLEAN ENERGY 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 13 CLIMATE ACTION

FENC is set to implement the verification of GHG inventories for 20 production sites in accordance with ISO 14064-1:2018. The scope of verification includes major GHG emitters from the entire supply chain. The Company launched the coaching program in 2020 for the ISO verification. In June, training was conducted for GHG management members at all production sites. The 2-day training was provided through both in-person and online formats held simultaneously at 15 remote locations. A total of 90 employees were in attendance.

Incorporation of Innovative Technology and Facility

Reducing Carbon Eemissions with Digital Upgrade

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 13 CLIMATE ACTION

1. Teleconferencing
FENC's production sites are located worldwide. Thus, the Company has adopted teleconferencing for years as a way to reduce environmental impacts and to facilitate efficient communication, while continuing optimizing the system and interface to refine this meeting format. In 2020, teleconferencing was considered the top option for all internal and external meetings, which helps reduce carbon footprints and meet the physical distancing requirement during the COVID-19 pandemic.

2. Lower Business Commute
Physical travel is replaced with online communication, and unnecessarily business travels are minimized. FENC sites utilize digital tools to enhance management and reduce the number of business trips.

Solar-Powered Street Lighting System

7 AFFORDABLE AND CLEAN ENERGY 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 13 CLIMATE ACTION

FEAV replaced the 48 street lighting fixtures adjacent to the plant with solar-powered street light. Though solar-powered equipment costs far more than the 0.25kW light bulbs, the solar option costs far less in terms of energy spending. The plant will be able to recoup the installation costs within 10 months, and save NT$140,000 in electricity spending yearly after that. Most importantly, this change is a significant step in bolstering the climate strategy on the use of renewable energy.

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Avid Support for Governmental Policies

The enactment of Trial Procedures of Shanghai Municipality on Carbon Emission Administration in 2013 puts a cap on carbon emission for OPSC and FEIS. The two subsidiaries ensure regulatory compliance by formulating various carbon reduction and monitoring measures, and establishing energy conservation and carbon reduction goals at each year end for the coming year. The progress is reviewed monthly during energy conservation meetings, where improvement measures are also proposed with designated lead agency for action. Each day, staff track the fluctuation of carbon pricing and report the observation during monthly meetings.

Carbon Quotas and Emissions of OPSC and FEIS

Unit: $ktCO_2e$

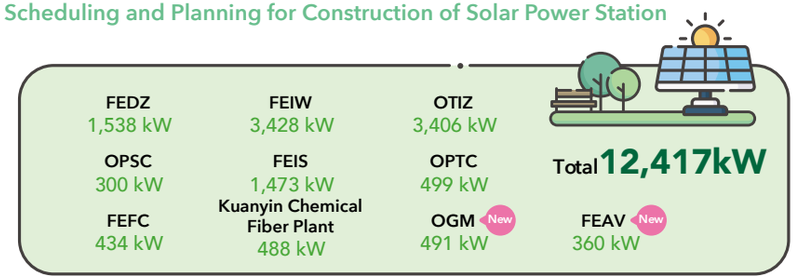
		2018	2019	2020
OPSC	Quota	173	166	**162**
	Actual Emissions	159	161	**150**
FEIS	Quota	344	324	**326**
	Actual Emissions	331	325	**309**

Note: The Quota of OPSC in 2019 was corrected from estimated emissions to government approved quota, and the actual emissions were revised to verification emissions. The Actual Emissions of FEIS in 2019 were revised to verification emissions.

3.2.2 Renewable Energy Use

FENC supports the use of renewable energy with actions. We reduce GHG emissions and minimize environmental impact induced by production activities. Since 2016, we have been building solar power stations at production sites in China. In 2020, the solar power stations in Taiwan, China and Vietnam produced a combined total of 13.15million kWh of power, which 84% of solar power generation is for FENC's own use. FENC has started conducting feasibility studies on solar power stations at Hsinpu Chemical Fiber Plant, Hukou Mill, Kuanyin Dyeing and Finishing Plant as well as production sites scheduled to be constructed in Vietnam.

Scheduling and Planning for Construction of Solar Power Station



According to Renewable Energy Development Act, major energy users must incorporate 10% of green power in the energy mix. FENC has been purchasing green power since 2015. In addition to ongoing venture in solar power generation, FENC also evaluates the feasibility of the purchase of renewable energy. OPTC will generate green power with the biogas produced during the wastewater treatment process.

Since 2015, FENC has been purchasing green energy from Taiwan Power Company. When the trading of Taiwan Renewable Energy Certificate (T-REC) started in 2018, FENC has purchased 138 renewable energy certificates from the Southern Region Campus of Industrial Technology Research Institute in 2019, 150 renewable energy certificates from Penghu University of Science and Technology in 2020. The total amount of renewable energy purchased reached 1.19 million kWh.

Smart Green Plant

7 AFFORDABLE AND CLEAN ENERGY 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 13 CLIMATE ACTION

To maintain a competitive edge, ensure environmental sustainability and improve workplace condition, FEAV has built a smart green plant. The plant was certified with LEED Silver by U.S. Green Building Council in October 2019, and production had begun in January 2020. It is the first apparel manufacturing plant built by Taiwanese enterprise in Vietnam that incorporates smart and green design. The factory utilizes renewable energy extensively with 2,800 square meters of rooftop solar panels, generating 40kW of monthly output that powers approximately 23% of the energy needed for 72 production lines.

The green design incorporated in this plant includes wet curtain walls controlled by centralized smart management system. Sensors are used to monitor the indoor temperature and humidity, and keep them at an ideal level. The building design adopts arcological concepts and green building materials; the roof garden helps mitigate heat island effects by reducing the temperature by 3°C to 10°C; rainwater and wastewater recycling rate is as high as 91%; drought-resistant plants are used in the landscape; automatic sprinkler system is designed to conserve water and restore the natural habitat.

The smart design concepts incorporated also include IoT with visualized data monitored in real time; smart logistics, which utilizes smart warehousing system to store and pick up the materials with speed and agility, and deliver the packaging materials directly to the work station; smart manufacturing, which involves 3D pattern-making, semi-automatic scheduling and productive recording system. Overall, the system saves NT$5.91 million in annual costs.

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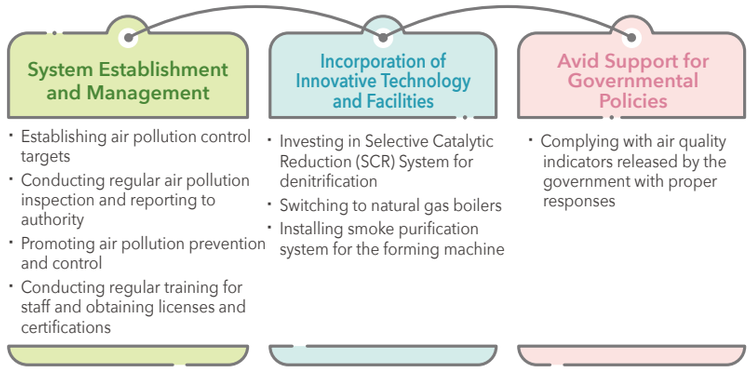
3.3 Preventing and Controlling Environmental Pollution

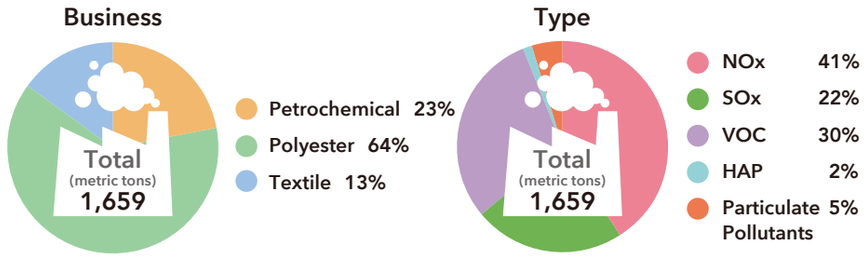
3.3.1 Air Pollution Management

Air Pollution Management Guidelines and Measures



The emission of air pollutants saw a dramatic decline of 16% in 2020, and emission per unit production decreased by 18%, which is the equivalent of 0.05kg/metric ton. The numbers reflect the effectiveness of FENC's strategies in upgrading equipment and facilities as well as managing the source of air pollution. Among the Businesses, air pollutants from Petrochemical Business increased by 23% in 2020. The increase is attributed to the catalyst used for exhaust treatment at OPSC, which is approaching the end of its 5-year life cycle. The decline in catalyst activity results in higher concentration of pollutants in the exhaust, it has purchased new catalyst and replacement will take place in June 2021 during the turnaround period. OPSC also invested in a new exhaust treatment facility that is scheduled to be completed and in operation in September 2021, which will further reduce the concentration of pollutants from the exhaust. For Polyester Business, the measures reduced air pollutant emission for the entire Business by 31% in 2020, because of Hsinpu Chemical Fiber Plant replaced the heavy crude oil boiler with natural gas boiler; FEFC cuts back on steam processing; FEIS revamped the production process with low nitrogen transformation.

Air Pollution Emissions in 2020



Air Pollution Emissions

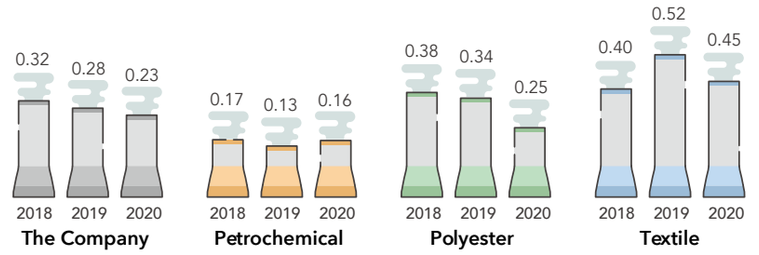
Unit: metric tons

	Petrochemical			Polyester			Textile			Total		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
NOx	131	143	**156**	727	655	**418**	104	121	**108**	962	919	**682**
SOx	56	74	**70**	163	286	**231**	65	76	**71**	284	436	**372**
VOC	108	96	**141**	368	361	**352**	6	7	**11**	482	464	**504**
HAP	0	0	**0**	8	24	**26**	0	0	**0**	8	24	**26**
Particulate Pollutants	3	7	**12**	47	53	**37**	37	80	**26**	87	140	**75**
Total	**298**	**320**	**379**	**1,313**	**1,379**	**1,064**	**212**	**284**	**216**	**1,823**	**1,983**	**1,659**

Note:
1. Only gases emitted are listed.
2. Particulate Pollutants include particulate matter (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 Hsinpu Chemical Fiber Plant (NOx, SOx, particulate pollutant), Kuanyin Chemical Fiber Plant (NOx, SOx, particulate pollutant), FEFC(NOx, SOx), polyester plant of FEPV, the second plant of OPTC, OPSC (NOx, SOx), WHFE, Kuanyin Dyeing and Finishing Plant, FEIW, FEDZ, FEAZ, FEAV and FENV; annualized sample values are from OPSC (VOC), FEIS and textile plant of FEPV; calculated values are from the first plant of OPTC, Hsinpu Chemical Fiber Plant (VOC), Kuanyin Chemical Fiber Plant (VOC), OGM, FEFC(VOC) and Hukou Mill, FIGP and APG Polytech; permitted amounts of emissions are from OTIZ.
4. Data on hazardous air pollutants (HAP) are provided by APG Polytech in the U.S. and FIGP in Japan. The 3 HAPs identified at APG Polytech are MEG, acetaldehyde and 1,4-Dioxane, which are regulated by U.S. Environmental Protection Agency. Acetaldehyde, which is on the list of HAPs regulated in Japan, is identified at FIGP.

Air Pollution Emissions Per Unit Production

Unit: KG/metric ton of product



Note: The Textile Business does not include FEAZ, FEAV and FENV.

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Air Pollution Emissions Per Unit Production in 2020

Unit: KG/metric ton of product

	Petrochemical	Polyester	Textile	The Company
NOx	0.06	0.10	0.22	**0.10**
SOx	0.03	0.05	0.15	**0.05**
VOC	0.06	0.08	0.02	**0.07**
HAP	0.00	0.01	0.00	**0.00**
Particulate Pollutants	0.01	0.01	0.06	**0.01**
Total	**0.16**	**0.25**	**0.45**	**0.23**

Note: The Textile Business does not include FEAZ, FEAV and FENV.

System Establishment and Management

FENC continues to introduce new technology on air pollution prevention and control, and examines existing facilities and production process regularly. The boilers and exhaust pipes are also inspected regularly to ensure regulatory compliance and help reach reduction targets.In 2020, OPTC sent operational parameters on all air pollution prevention and control equipment directly to the data collection system at the control center and designed an independent control interface for early detection and improvement.

On August 6th, 2019, Environmental Protection Administration of the Executive Yuan, Taiwan issued the notice, Public or Private Premises List of Dedicated Air Pollution Control Units or Personnel and Dedicated Health Risk Assessment Personnel. Being a PTA manufacturer, OPTC is among the first group of enterprises required to have in-house health risk assessment personnel. In 2020, OPTC began recruitment and training. After being certified, the health risk assessment personnel will be deployed in accordance with the regulatory requirement. OPTC also installed continuous emission monitoring system (CEMS) and conducts relative accuracy test audit (RATA) quarterly. The plant also has anomaly reporting mechanism in place. In case of abnormal emission, the reporting mechanism sends notifications immediately to bolster pollution prevention and control.

Avid Support for Governmental Policies

Seasonal weather tends to take the air quality at FENC production sites for a downward spin in autumn and winter. Thus we strictly comply with all government mandates on air pollution and control. When Hsinpu Chemical Fiber Plant receives notice from the Environmental Protection Administration about deteriorating air quality, the plant activates tiered response based on the severity, including checking boiler operation, activating prevention and control facilities and reducing material feed to keep air quality from deteriorating. OPSC and FEIS responded to the government mandate by scheduling the annual maintenance in November, and reducing operations and transport vehicles that are prone to generate dusts.OGM applied for industrial boiler upgrade subsidy from Taoyuan City Government. The subsidy is used toward upgrading natural gas pipelines, installing pressure-reducing stations and changing boiler burners. The installation and upgrade have been completed in 2020, and currently, all boilers at OGM are natural gas boilers.

Incorporation of Innovative Technology and Facility

To reduce air pollution, Hsinpu Chemical Fiber Plant and Kuanyin Chemical Fiber Plant invested in Selective Catalytic Reduction (SCR) System for denitrification. SCR allows NOx and ammonia to mix through a special catalyst, and converts the mixture into innocuous nitrogen and water. The system is expected to reduce 70% of NOx in the coal water slurry. The 4 sets of equipment at Kuanyin Chemical Fiber Plant were fully installed and the 6 sets in Hsinpu Chemical Fiber Plant are expected to be installed by 2022.Hsinpu Chemical Fiber Plant replaced the heavy crude oil boiler with natural gas boiler, which reduced SOx by 96%, NOx by 86% and particle matters by 93%. In 2020, OTIZ added 5 regenerative thermal oxidizers (RTOs) to treat the exhaust, reducing volatile organic compounds (VOC) by 90%. FEIS retrofitted the dryer for filament and increased the airflow of exhaust fan, which greatly reduced VOC by 16%.

Chain Grate Boiler Retrofit

The polyester plant of FEPV is the first among FENC production sites to install chain grate boilers. In terms of investment or operational performance, chain grate boilers are best suited for heating the heat conduction oil based on the scale of production for this plant. However, we faced a few major challenges during the process. Depending on the type of coal used, boiler slagging may occur, which affects production. The desulfurization system also needs improvement. Therefore, the polyester plant of FEPV established an interdepartmental team to tackle system improvement. After a year of hard work, the team has greatly improved the reliability and stability of the chain grate boilers. The clogging issue at the desulfurization tower has also been solved, thus improving its efficiency, reducing SOx by 60% and lower the costs for fly ash treatment by NT$2.13 million. Futhermore, the plant has also accumulated valuable experience in operating and repairing coal boilers, and will be able to share the knowledge with other production units.

Prior to the improvement:Large amount of fine coal particles causes boiler slagging

After the improvement:The boiler is functioning properly after standardizing the particle size of coal

Newly designed desulfurization tower

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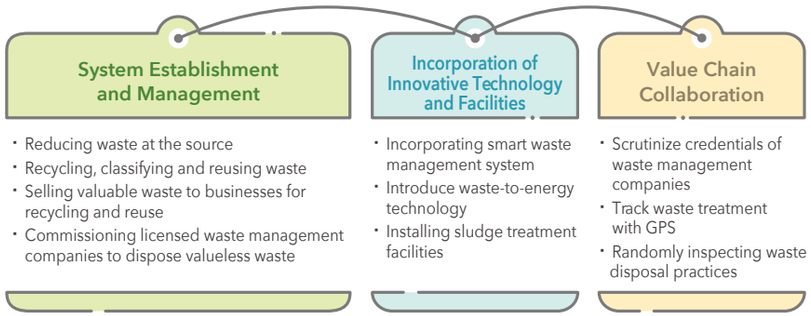
3.3.2 Waste Management

Waste Management Guidelines and Measures



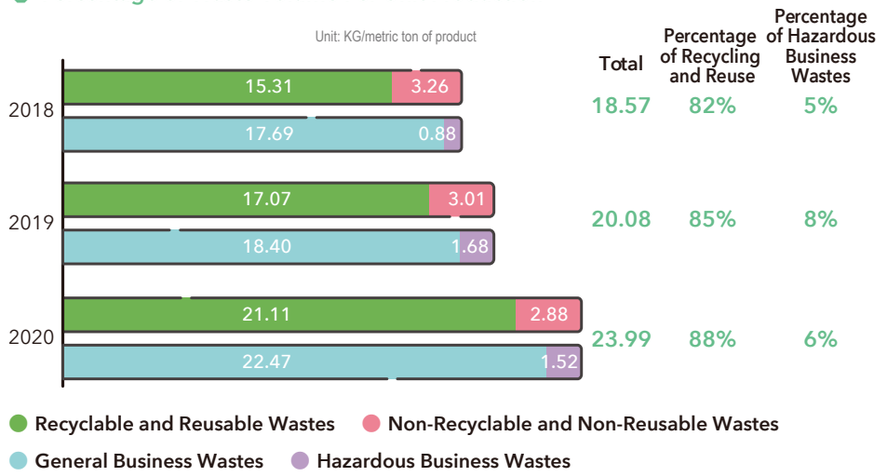
Data of Waste

Unit: metric tons

				2018	2019	2020
Recyclable and Reusable Wastes	General Business Wastes	Manufacturing Process Wastes		83,152	114,277	**145,980**
		Domestic Wastes		3,159	1,743	**1,344**
	Hazardous Business Wastes Total			3,828	8,203	**5,363**
	Total Recyclable and Reusable Wastes			**90,139**	**124,223**	**152,687**
Non-Recyclable and Non-Reusable Wastes	General Business Wastes	Manufacturing Process Wastes	Energy Uses	5,939	3,998	**1,293**
			Incineration	6,910	9,747	**8,999**
			Landfilling	1,089	797	**228**
			Other Treatment Methods	1,581	1,036	**2,265**
		Manufacturing Process Wastes	Energy Uses	368	367	**373**
			Incineration	1,294	1,089	**1,175**
			Landfilling	439	390	**601**
			Other Treatment Methods	111	125	**111**
	Hazardous Business Wastes Total		Energy Uses	414	132	**0**
			Incineration	774	3,692	**5,483**
			Landfilling	0	2	**2**
			Other Treatment Methods	22	36	**85**
	Non-Reusable Wastes			**18,941**	**21,411**	**20,615**
Total Wastes				**109,080**	**145,634**	**173,302**

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

Percentage of Waste Volume Per Unit Production



Note: The Textile Business does not include FEAZ, FEAV and FENV.

Total waste in 2020 increased by 19% largely due to production increase. However, FENC encourages recycling and reuse, turning waste to reusable resources through internal recycling or with the help of waste management companies. Though there is a slight upward trend in total waste generated, the volume of non-recycled and non-reused waste decreases by 4% comparing to the previous year, and the percentage of recycled and reused waste rose from 85% to 88%. Comparing to 2019, waste per unit production rose by 19%. The increase in waste generated is mainly the result of production modification, pilot runs as well as workplace accidents.

FENC is consistent in efforts to enhance waste management at all production sites. We implement waste avoidance and promote recycling and classification so that resources can be reused. We also choose licensed waste management companies to make sure that valuable waste is recycled and reused, and valueless waste is properly disposed of to prevent pollution.

At OGM, removed labels are a major source of waste, accounting for 81% from the entire plant. In Taiwan, the number of incinerators at solid waste treatment plants is limited, which delays the cleanup and treatment process. OGM is planning to build the incinerator facility to treat industrial solid waste, and has obtained the permit for installing stationary pollution source. Construction began in June 2020 and is scheduled to be completed in September 2021. OGM has also applied for the permit to operate stationary pollution source, and is ready to start turning waste labels into thermal energy.

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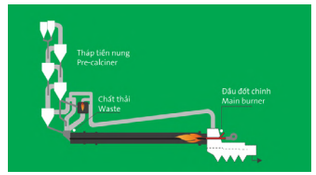
FEAZ installed online warehouse surveillance system to monitor hazardous waste in 2020. The system is connected to the security office, allowing security staff to monitor hazardous waste in real time. Each year, FEAZ conducts 2 on-site inspections with waste management companies, while FEIS holds annual training for waste management companies and downstream suppliers once a year to explain the management system and optimization guidelines. Eight suppliers took part in this training in 2020.

Waste to Energy

Since July 2020, FENV has been implementing the co-processing approach by working with cement suppliers chosen by customers to convert non-recyclable production waste into energy. The waste-to-energy (WTE) process takes place in a high-temperature environment in the cement kiln. During the second half of 2020, the recycling and reuse rate at FENV rose from 75% to 100%.

Additionally, a study done by WBCSD indicates that while dioxins cannot not be properly treated in an incinerator, it does decompose at an average temperature of 1,300°C in a cement kiln. Cement kiln detoxifies the majority of waste materials generated by humans, and regenerates them into reusable resources.



Co-processing at cement kiln

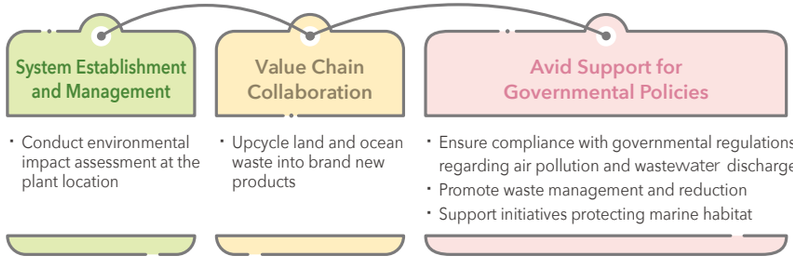
Support Environment and Earth by Minimizing Plastics

Waste management at FEAV is guided by the principle, "minimizing waste with classification; turning valueless to valuable." The plant offers training on waste classification for both new and existing employees. In addition, FEAV installed FEAV Waste Classification Bulletin at all interior and exterior waste collection locations to remind employees to recycle.

1. The caterers switched to cotton dessert bags. As a result, the plant reduced the consumption of plastic bags by approximately 312 kg in 2020.
2. Instead of providing 1 trash bin for each office employee, a team of 6 to 8 employees now share 2 trash bins, 1 for paper waste and 1 for domestic waste. By removing 233 trash bins, monthly reduction of plastic bags reached 930 to 1,860 rolls.

3.3.3 Ecological Protection

Biodiversity Management and Measures



All FENC production sites underwent multiple assessments in accordance with environmental regulations during the planning stage. Sites chosen are located within industrial zones permitted by the local governments. None of the properties are located within wildlife preservation areas or reserves, and no animals on site are listed on the IUCN Red List of Threatened Species or national conservation lists.

It is our pledge to devote every effort possible to keep production activities from impacting local biodiversity. In order to reduce environmental impacts during production, OPTC ensures higher efficiency in the operation of pollution prevention and control equipment, and conducts annual environmental testing to monitor environmental impacts. The plant holds monthly environmental impact meetings with supervisors from all units to discuss existing and potential impacts while exploring responses and improvement measures that will reduce negative impacts on local environment and habitat.

Ecological Protection

Bình Dương Green Book, Vietnam

In 2020, FEAV was honored in the Green List of Bình Dương Green Book from Bình Dương Provincial People's Committee in Vietnam. The award recognizes enterprises with reputable corporate image and brand value that have contributed significantly to environmental protection in Bình Dương Province. FEAV has been acknowledged for its devotion to the cause as well as the preventive measures it has taken to mitigate environmental impact. FEAV demonstrated its contribution to the protection of local environment and support the governmental direction to "balance economic development and environmental protection," thus deserving the award.