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# Enabling Unlimited Innovation

2021 Highlight Targets and Progress

Material Topics

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2.2 Building Customer Rapport2.3 Promoting Product Marketing

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# **Enabling Unlimited** Innovation



2.1 Instigating Production and 56 Product Innovation

2.2 Building Customer Rapport 57

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# 2.3 Promoting Product Marketing

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 Organization



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Targets and Progress

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# 2021 Highlight





**ISPO Textrends Award** 

**Accelerated Eco** 

**Best Product** 

New Product Sales NT\$13.820<sup>Billion</sup> 10% Growth

# 78% Digitized of 161 Operations in Corporate Management

# **First Bio-material**

Utilized in Face Masks in the World

**Ranked No. 2** Among Nike's Apparel Suppliers in Lean Maturity Assessment

The Only

Vertically Integrated N66 Supplier in the World



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Enabling Unlimited Innovation 2021 Highlight Targets and Progress Material Topics

2.1 Instigating Production and Product Innovation

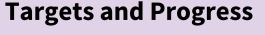
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2030 Target

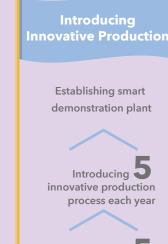
2025 Target

2022 Target

2021 Target

2021 Progress

**Action Plan** 



Introducing **5** innovative production process each year

Introducing **5** innovative production process each year Completed

Please refer to <u>2.1 Instigating</u>
<u>Production and Product Innovation.</u>

Continue the partnership with NIKE on global digitization and modernization.
Continue incorporating AI and Industry 4.0 applications.



Growth in Green Product Revenue

100% growth

80% growth

65% growth

55% growth Completed

NT\$ **38.379** Billion **76%** Growth

Accelerate research and development of green products.
Expand production capacity.
Enhance sales to customers.



Growth in New Product Revenue

2000% growth

500

1500% growth



1200% growth

**1100%** growth

NT\$ **13.820** Billion, **1000%** Growth FENC enhances product development and marketing to address unmet goals.

• Accelerate research and development of new products.

Provide training for R&D talents.
Facilitate close collaboration between R&D and business units.



Implementing **3** customer

Improving

**Customer Satisfaction** 

satisfaction initiatives yearly





Implementing **3** customer satisfaction initiatives yearly

Implementing **3** customer satisfaction initiatives yearly Completed

- FENC constructed the only vertically integrated supply chain for N66 in the world.
- FENC hosted 2021 product showcase.
- Products comply with international standards with certifications.
- Gain insights into customer needs through meetings and plant visits.
- Respond to customer requests on a timely manner and conduct review and improvements based on customer feedbacks.



Note: Growth in Green Product and New Product Revenue are set with 2015 as the base year.

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#### Significance and Purpose of Management for FENC

Innovation is the entrepreneur spirit that has been guiding FENC. With tremendous R&D momentum, we develop forward-looking products and transition into smart production and product services, making sustainability a reality through innovation, and generating green opportunities with circular economy.

#### Management Approaches and Effectiveness **Evaluation Mechanisms**

- Establish R&D Center and continue to infuse resources into the research and development of innovative products and production.
- Generate business opportunities through differentiation, value-adding and advantage in green products.

#### Authority

Production Units

**Material Topics** 

**Instigate Production and** 

**Product Innovation** 

R&D Center



# **Build Customer Rapport**

#### Significance and Purpose of Management for FENC

We establish committed dialogues with customers to help them achieve sustainability goals, and maintain rapport by providing diverse and innovative products with quality and the best after-sales service, building the reputation as a corporation that fosters both revenues sustainability.

#### Management Approaches and Effectiveness **Evaluation Mechanisms**

- Establish Regulations Governing Customer Relationship Management as the principle guiding customer relations.
- Conduct 2 company-wide sales meetings each month to stay current on market trends and review sales conditions.
- Managers of business units are to monitor interaction between sales and customers and conduct customer satisfaction surveys to maintain customer orders.

#### Authority

- Petrochemical Business
- Polyester Business
- Textile Business



# **Promote Product Marketing**



### Significance and Purpose of Management for FENC

We appeal to customers with diverse marketing approaches by tracking customer needs, meeting market demands for new products, strengthening sales abilities and polishing corporate and product image.

#### **Management Approaches and Effectiveness Evaluation Mechanisms**

- Actively participate in exhibitions, presenting the latest products and documenting performance such as the number of visitors and orders as well as business development to align sales directions.
- Obtain product certifications and ensure compliance with international standards.

#### Authority

- Petrochemical Business
- Polyester Business
- Textile Business

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#### 2.1 Instigating Production and Product Innovation

FENC is the leader in the global polyester and textile industry. While the Company continues the pursuit of excellence to hone long-term competitiveness during business expansion, its devotion to R&D is unparalleled.

#### **Elevating Innovative Momentum**

Performance in R&D and Innovation

1,133

2001-2019

1. R&D Center was founded in 2001

797

Note:

1.163

2001-2020

2. FENC acquired Sharon Center in the U.S. in 2018, and the

2021, ownership for 483 of them has been transferred.

transfer of patent ownership has been ongoing. Sharon Center received approval on 558 patents. As of the end of December

Patent Applications

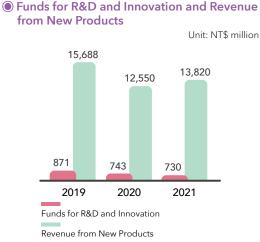
845

- 1. Units dedicated to R&D include Far Eastern Group R&D Center (R&D Center) in Taiwan and Sharon Center in the U.S. The two organizations are devoted to developing next-generation products, materials and production processes and continue to infuse growth momentum for FENC.
- 2. Product development departments are established in the business units to develop products tailored to customers' needs through frequent communications as well as to produce and commercialize the products in a short period of time, which would ensure customer satisfaction while generating revenues.

1,182

2001-2021

879



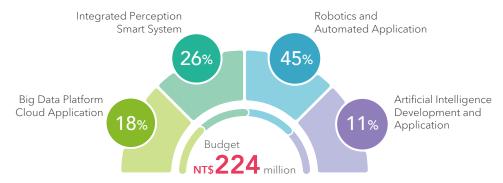
Note: Revenue from new products is generated through the use of technology from the R&D Center or from technology transfer.

#### Launching Digital Transformation

In recent years, global manufacturers have been racing towards digital transformation and smart manufacturing. FENC has not shied away from the race, devoting resources and establishing departments dedicated to organizational implementation. Currently, multiple projects are under way and have borne fruits. Interactions among the units have accelerated the learning process, creating more successes that will sustain the innovative momentum.

- 1. Hsinpu Chemical Fiber Plant established Smart Information Department in 2021 to promote intellectualization tasks. On September 15, the plant held a contest and sharing session on the promotion of digital transformation, which covers agile application; integrated perception; IoT application and integration; coordinated operation; best practice in the intelligence center; AI application; digital transformation innovation. A total of 155 employees from 90 divisions participated in the contest and 279 attended the sharing session. The event concluded with the presentation of 1 special award, 7 high distinctions, 5 awards of excellence and 11 honorable mentions.
- 2. The spread of COVID-19 prompted Corporate Management to accelerate the utilization of cloud and digital systems as the means to enhance corporate resilience. As of the end of 2021, 78 information systems have transitioned to the cloud, and 78% of 161 operational procedures are digitized. Digital transformation allows employees to embrace the remote work model. The Company has another 30 projects on value-adding information application, some of which have been completed, including platforms for customer and product contribution analysis; customer credit management; Forex gain/loss forecast; export receivable analysis; employee health care system; energy consumption analysis.

### Digital Transformation Budget



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The disruptive impact of COVID-19 on life and work is felt worldwide, and face masks have become the most effective and essential pandemic fighting tool. Statistics show that in 2021, average monthly face mask production reached 129 billion, which would require 540,000 metric tons of fiber, meaning 540,000 metric tons of monthly petrochemical waste.

FENC is one of the suppliers providing raw materials for the National Face Mask Production Team. During the 3rd quarter of 2021, Staple Fiber Division successfully developed FENC® Bio-hygiene, the raw material for non-woven fabric used in biomass and biodegradable face masks. Made from fermented sugarcane, the fiber is hydrophilic, skin-friendly and supple, which is likened to the quality of petrochemical fibers. At the end of the product life cycle, the material is biodegradable underground. The use of FENC® Bio-hygiene reduces carbon emission by over 50%, helping FENC fulfill its social responsibility and protect the environment.

#### Focusing on Green Innovation

#### 1. Climate Change Series

With Replace, Recycle and Reduce as the core concept, products in this series aim to mitigate climate change.

#### 2. Eco-friendly Series

This series offers a wide range of products that are friendly to the environment by using non-toxic materials, catalysts and additives to reduce pollutants emitted during production and minimize negative environmental impacts.

#### Revenue from Green Products



## **Automated Warehouse System**



At the textile plant of FEPV, products and raw materials are stored in and retrieved from the warehouse with manual operation and forklifts. Such operation is time and labor intensive. In 2021, the plant installed an automated warehouse system with sorting loop vehicle (SLV), which automatically delivers the raw materials into the warehouse, and from the warehouse to the unit with material requisition. At the end of the production process, SLV may also deliver the finished fabric products to the warehouse. With the previous manual warehouse operation, 40 metric tons of raw materials would require 6 hours to complete, but it takes only 4 hours with SLV. SLV routes can be programmed through smart systems, which drastically enhance energy and operational efficiency.

# **2.2 Building Customer Rapport**

FENC is the leader in the global polyester industry. Being the only vertically integrated supplier, the Company has the market advantage of providing one-stop shopping solutions with goods and services spanning from polyester materials to product applications. Such ability allows FENC to target market trends with precision and formulate R&D strategies. Customers are one of the most important stakeholders for FENC. We monitor product quality with the highest standards, establishing client relations management rules and quality control manuals. The Company also assesses customer needs through multiple channels, such as face-to-face meetings, video and teleconferencing as well as mail correspondence, to establish long-term partnership.

Customer feedback is what drives improvements in products and services at FENC. Hence the Company conducts 1 to 2 customer satisfaction surveys each year. The design and implementation of the survey are fulfilled by the sales and production units with the Presidents of Petrochemical, Polyester and Textile Businesses serving as the highest-ranking executives. Regular customer satisfaction surveys allow the Company to pinpoint customer needs and feedback. The Company also conducts reviews with follow-ups and improvements through internal meetings.

#### FENC's Customer Relations



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**Delivering Success for Clients by Solving Port** 

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The COVID-19 pandemic paralyzed land and marine supply chains worldwide. The dire situation has not subsided since it began in 2020. Labor and vehicle shortages lead to container shortages and congested ports, which result in surging shipping prices and prolonged delivery. FENC values each and every order placed by customers, and therefore developed multiple contingency plans within the least amount of time. Using multi-modal transportation, FENC has been successfully delivering all orders to the appointed destinations on time since the pandemic erupted.

In the past, FENC's worldwide shipment is delivered through container ships. Given the degree of container shortages, the Company chose the alternative of using bulk carriers and refrigerated containers. The first bulk carrier set sail on September 13, 2021, carrying 7,800 metric tons of goods and the second on February 15, 2022 carrying 20,000 metric tons. Compared to container ships, shipping through bulk carriers and refrigerated containers requires completely different logistic thinking in terms of packaging, quantity and loading, all of which are testing the Company's agility. In addition, the shipment of products from Mainland China to Europe is partially modified through container railways in Central Europe. Goods shipped to the U.S. are transported through the railway system of APG Polytech, a subsidiary of FENC, which facilitates the shipment of goods from the harbor to customers, ensuring for them uninterrupted supply of materials and operation. The swift response successfully resolved the port congestion crisis.



# No. 2 Global Ranking in Nike's Lean Maturity Assessment

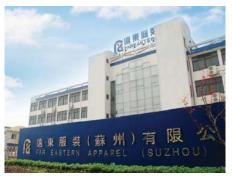


FENC's customer, Nike, developed Lean Maturity Assessment (LMA) to evaluate its global suppliers' apparel and footwear factories. LMA encompasses 35 categories at 4 levels, leadership, roadmap, execution and sustain.

FEAZ obtained the no. 2 ranking in the 2021 LMA among Nike's apparel factories, and no. 1 among the apparel factories in Mainland China. FEAZ examined its own lean management through LMA and used the assessment to guide internal implementation and improvement. Optimization projects implemented include development of lean management talents, improvement on lean production, process on analyzing irregularities as well as introduction of SOP and systematic tools to fully incorporate lean management into the corporate system.

FEAZ has received high distinction among Nike's apparel suppliers, which will strengthen the collaboration between the two companies. The plant will also apply lean management practices to other apparel production or dyeing and finishing sites under FENC to extend the benefit.





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N66 is a highly differentiated and highvalue textile product with strict standards regarding raw materials, technology, production process and management. The production of N66 requires high thresholds and the market is currently oligopolistic with few suppliers. With a strong backbone of vertically integrated polyester supply chain, FENC has amassed rich experiences in supplying for international brands. By integrating the strengths from FEFC, FEIS,



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FEDZ, FEAZ and FEAV, the Company constructed a supply chain capable of producing a wide range of products, from the POY, DTY, high stretch fabric to yoga apparel, becoming the only vertically integrated N66 supplier in the world.

N66 products are susceptible to deterioration caused by ultraviolet light, high temperature and metal abrasion. Compared to other chemical fibers, the production of N66 is much more challenging. FEIS built machine shops with temperature and humidity control and a DTY production line specifically for N66; FEDZ installed a circular knitting machine with high yarn counts as well as dyeing and finishing equipment. Staff utilized production and quality management technologies with quality assurance to set up N66 operation and the SOP for inspection. The production process and storage conditions are strictly controlled to ensure consistent quality. The yield rate of FENC's N66 DTY reached 93%, which is higher than the industry average of 85%. FENC's breakthroughs in the quality of solution dye greatly reduced water consumption during the dyeing and finishing process, thus giving the Company a competitive advantage.

FENC's vertically integrated supply chain for N66 produces high-quality products with a short lead time for delivery. The product is favored by lululemon, the yoga apparel brand which made FENC a strategic partner. In 2021, orders from lululemon increased dramatically, increasing 9 times compared to 2018.

#### Green Initiatives

We are seeking a balanced approach in economic and environmental development with active participation in green initiatives. By engaging in conferences and forums, we communicate with our customers, building consensus in the development goals for the future. The following is a list of the green initiatives that the Company has taken part in:

- Taiwan Circular Economy 100, TCE100
- Packaging Recycling Organization Vietnam, PRO-Vietnam
- The National Association for PET Container Resources, NAPCOR
- The Association of Plastic Recyclers, APR
- Zero Discharge of Hazardous Chemicals, ZDHC
- Sustainable Apparel Coalition, SAC
- Textile Exchange, TE

#### **Compliance with Customer Requirements**

We have signed agreements with brand customers, and abide by the ethical, safety and procurement rules set forth while aspiring for further self-improvement.

- We comply with ethics provisions from brand customers and pass SEDEX Members Ethical Trade Audits (SMETA).
- Fair Trade Certified USA (FTC USA)
- Social & Labor Convergence Program (SLCP)
- We follow brand customers' safety compliance standards.
- We manage green supply chain.

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## 2.3 Promoting Product Marketing

FENC produces the raw materials for our customers, which are mainly corporate entities. Channels of product marketing include conferences, trade expos and other forms of corporate interactions, which give the Company means to promote products, establish brand value and improve sales revenue.

#### **Product Quality and Safety Certification**



#### **Concerned Substance and Issue Management**

• Products, raw materials and production processes at FENC do not involve (not applicable) genetic engineering, nanotechnology, stem cell research, conflict minerals, animal testing or endangered species.

- Safety Data Sheet (SDS) is provided for all FENC products in compliance with regulatory requirements, and managed and updated by designated personnel. Hazard assessment is conducted through the requirements listed on SDS, which cover risk identification, implement, required documentation, information provision and communication. The assessment ensures the safety of product usage, storage, delivery and disposal
- None of the products produced by Polyester and Textile Businesses are under hazard categories 1 and 2 of Globally Harmonized System of Classification and Labeling of Chemicals (GHS). PTA, a product under Petrochemical Business, is classified under health hazard category 2 (serious damage/Category 2B of eye irritation: the effects are fully reversible within 7 days of observation; Category 2 for reproductive toxicity: suspected human reproductive toxicant.)

• During the reporting period, there were no incidences or disputes involving inappropriate usage, storage, transport or waste disposal regarding Company products.

#### **Green Product Certification**

Global awareness on environmental sustainability is on the rise, and our downstream customers are more inclined towards raw materials with low environmental impact. FENC seeks out green product certifications with high standards to gain downstream customers' support for and desire to purchase our products. FENC has obtained the following green product certifications, which we regularly update to ensure compliance.



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Taipei Innovative Textile Application Show (TITAS) is the most celebrated event of the year in the textile industry in Taiwan. Concerns over the COVID-19 pandemic moved the conventionally in-person format to a virtual one in 2021. The 30day online event drew over 70,000 viewings from 102 countries.

FENC also held the 2021 product showcase on November 3 and invited the press to cover the latest product lineup from FENC. This year's theme is "Making Strides through Land, Ocean and Air," which narrates how FENC utilizes cutting-edge technology to 17 PARTNERSHIPS 8





transform used clothing, ocean waste plastic and industrial waste gas into recycled polyester. The fruit of this labor has been favored by international sports brands. FENC has also been designated as the supplier of sports jersey materials for 17 Olympic teams. Additionally, soccer athletes from 7 national teams during the 2022 FIFA World Cup will be dressed in uniforms made of recycled ocean plastic provided by FENC. In the future, FENC will continue to enhance its green supply chain and strive to protect the environment.

#### **Best Product Award at ISPO TEXTRENDS**

FENC's proprietary FENC®TOPGREEN®BIO3 has been recognized with FW23/24 Accelerated Eco Best Product Award at 2022 ISPO TEXTRENDS.

ISPO TEXTRENDS, the Oscars of the global textile industry, is a worldclass platform to showcase textile products. During this international



event, FENC stood out among over 200 suppliers, grabbing the spotlight with Solution Dye N66 and FENC®TOPGREEN®BIO3, the world's first polyester material made with carbon capture technology. The innovation won FENC Accelerated Eco Best Product Award, the highest honor from ISPO TEXTRENDS.

The Company also collaborated with LanzaTech, a bio startup, and several apparel brands to capture and transform waste gas from steel plants into polyester material. Manufacturing recycled varn from waste gas delivers direct benefits in energy conservation and carbon reduction, cutting GHG emissions by 30%. While reducing environmental pollution, this technology in turn minimizes the reliance on fossil fuel and bio-based materials.

In terms of the production process, the Company has incorporated the N66 solution dye process, which skips the water dyeing process. By moving up the solution dyeing process during spinning, the entire production consumes 61% less water, 67% less energy and produces 85% less GHG emissions compared to the conventional dyeing process. This technology allows the dye to fully mix with the fiber during the melting and spinning process, giving the fabrics better color saturation and vibrancy than those produced with conventional methods. In addition to the color performance, better sunlight and washing fastness also contributes to energy reduction.

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