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Reaching Zero Carbon Through Low-Carbon Transition

As of the end of 2023, over 100 countries and 1,000 global companies have made the pledge to reach net zero. Achieving this goal takes stronger actions and more powerful decarbonization programs. Meanwhile, implementation is vital. During the 2023 United Nations Climate Change Conference (COP 28), consensus was reached to scale up renewable energy capacity and energy efficiency to catalyze energy transitions. Nearly 200 countries have committed to transitioning away from fossil fuels, positioning the renewable energy as a key solution that will tame global warming.

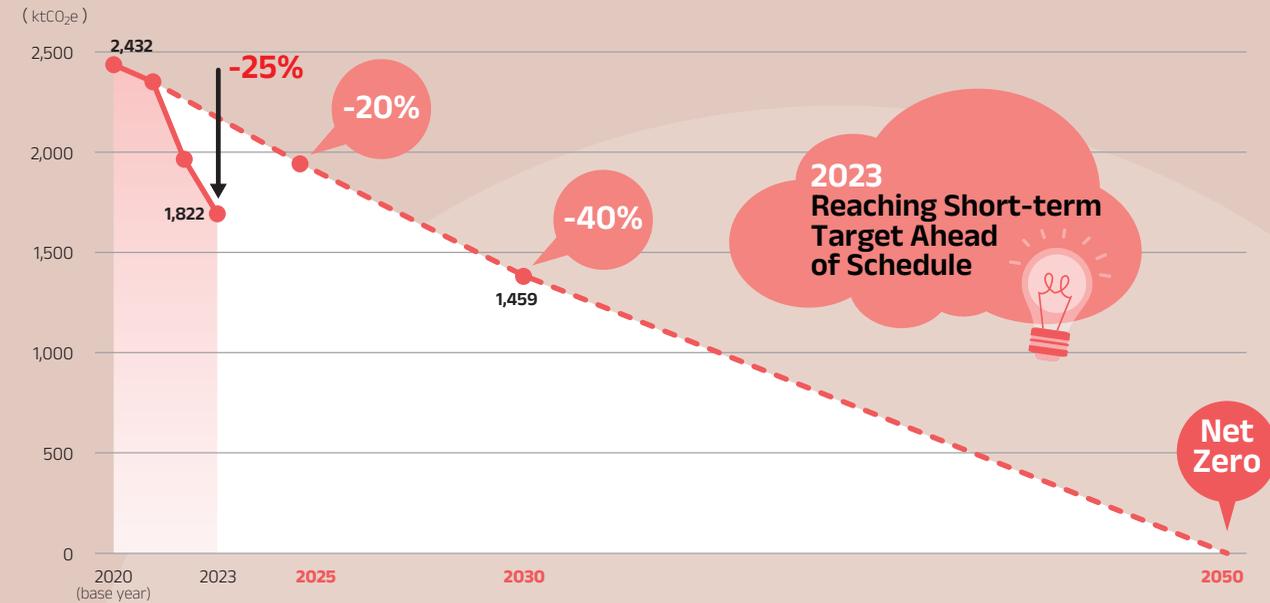
Internal Carbon Pricing System

To accelerate the pace of decarbonization within the Company and complete the net-zero transition, FENC incorporated the internal carbon pricing system in 2023 as a management tool. FENC reviewed international carbon pricing trends and reports such as "World Energy Outlook" from the International Energy Agency (IEA) and "State and Trends in Carbon Pricing" published by the World Bank, examined internal and external carbon costs from its global production site, and consulted the pricing approaches and strategies within the industry to arrive at NT\$1,500/tCO₂e as the internal carbon pricing for developed economies, and NT\$1,000/tCO₂e for emerging economies, effective in 2024 after the Board review.

The carbon pricing system is implemented through two approaches. First, the system is included as a criterion that improves carbon efficiency during the review of carbon reduction projects to incentivize decarbonization. Second, the system is used to calculate the carbon costs of all Businesses for the monthly management reports as a decision-making reference.

Net-Zero Pathway

In 2022, the Board of FENC approved the short-, mid- and long-term GHG reduction targets, kicking off the net-zero pathway through five major strategies and actions coordinated by the Energy Task Force, the designated environmental and energy management entity at FENC.



Note:
1. The emissions include scopes 1 and 2 emissions from all production sites within the scope of this report.
2. Carbon credits are excluded from contribution towards the GHG reduction targets of FENC.

Scopes 1 and 2 GHG emissions reached 1,822 ktCO₂e in 2023, down by 25% from the base year. This drop also surpassed the short-term target, which is at a pace well ahead of schedule. To continue its alignment with international trends and boost competitiveness in the net-zero era, the Company is exploring higher 2030 reduction targets. FENC is leading the industry on the march towards net zero with more determination and aspirations. Once all FENC production sites commit to specific action plans, and after taking the internal carbon pricing system into consideration, the targets will be adjusted pragmatically. When the adjustments are determined, they will be announced.

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Five Major Low-Carbon Transition Strategies and Progress

FENC takes pragmatic steps towards carbon reduction, establishing five major carbon-reduction strategies and building green operation through carbon reduction pathways. To reach the 2030 GHG reduction targets, the Company is investing an estimated NT\$19.4 billion between 2022 and 2030 with an estimated 1.32 MtCO₂e in carbon avoidance. The performance of 2023 energy and carbon reduction projects is included in [3.1.1 GHG Management](#).

Improve Energy Efficiency



Progress

In 2023, FENC reduced a total of 36,573 tCO₂e in carbon emissions through production improvement, equipment enhancement and energy management.

Future Plan

A 35MW cogeneration system will be constructed in Vietnam in 2026. The thermal energy produced from the fuel will be captured to generate steam and electricity to improve fuel efficiency.

Production improvement will be completed at OPTC in 2026. The improvement will allow electricity to be generated during production, which will avert 80,000 tCO₂e in annual carbon emissions.

Utilize CCUS



Progress

The new carbon reduction technology team was established to continue the efforts in collecting and researching relevant information and approaches.

Future Plan

The future plan is to capture carbon emissions directly from the exhaust and transform carbon dioxide into functional products.

Adopt Low-Emission Fuel Alternatives



Progress

In 2023, Kuanyin Chemical Fiber Plant replaced the slurry boilers with the natural gas models, a low-carbon alternative that reduces 22,667 tCO₂e in carbon emissions. The polyester plant and the knitting and dyeing plant of FEPV added wood pellets to coal, which reduced 15,048 tCO₂e in carbon emissions.

Future Plan

FEPV will increase the use of biomass fuel alternatives.

Research and development efforts will continue to focus on applications of hydrogen and biomass fuels.

Foster Raw Material Transition



Progress

FENC uses low-carbon alternatives, including recycled substances and biomass, as the raw material. The Company recycles PET bottles and remanufactures them into rPET. In 2023, OPTC pioneered Bio-PTA through R&D collaboration with supply chain partners, and signed the letter of intent with suppliers. FEIS also purchased MEG as the alternative material to produce low-carbon rPET.

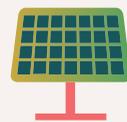
Future Plan

FENC will continue to maximize its core strengths in technological advancement to develop new low-carbon and environmental materials, and expand product applications.

- Recycled materials: As a leading enterprise in the global rPET industry, FENC is materializing the vision of a circular economy by turning waste into usable materials and new products. Additional details are included in [Special Report 1. Living Sustainably Through Circular Economy](#).

- Biomass materials: Research and development efforts will be channeled towards scalable biomass PTA materials. Additional details are included in [2.2 Developing Green Products](#).

Develop Renewable Energy



Progress

As of the end of 2023, 13 FENC production sites in Taiwan, mainland China and Vietnam had installed solar power generators with 18,622 kW in capacity, generated 18,300 MWh of self-use solar power and purchased over 160 GWh of renewable energy. In total, these efforts avoided 90,819 tCO₂e of carbon emissions. In addition, FIGP's Kanto Plant was powered 100% by renewable electricity in 2023.

Future Plan

FENC will continue to acquire renewable energy through means such as long-term power purchase agreements and expand the self-generated renewable energy capacity at its global sites for self-use. The goal for renewable energy is to account for 20% of the energy mix at FENC's global sites by 2025.

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Value Chain Engagement

The Advocate

FENC is committed to corporate sustainability for the long haul. To stay on par with the best in the world and engage industry peers to create climate solutions, FENC signed the declaration to support Task Force on Climate-Related Financial Disclosures (TCFD) on August 21, 2020. As of the end of November 2023, close to 5,000 corporations around the globe had signed the declaration, and FENC is the first traditional manufacturing business in Taiwan to do so. Its TCFD disclosures began in 2019 as part of the annual sustainability report. On March 2023, the Company issued its first TCFD Report.



FENC's Polyester Business and OTIZ, a subsidiary, also submitted the commitment letter to the Science Based Targets Initiative (SBTi) in March 2023, pledging to be net-zero committed and reach its near-term targets that align with the 1.5°C pathway. The commitment letter has been accepted by SBTi. The reduction targets were submitted in January 2024. Those submitted by the Polyester Business are currently under review, and those from OTIZ have been approved by SBTi in March 2024. In July 2023, FENC joined the Manufacturer Climate Action Program (MCAP) developed by Sustainable Apparel Coalition (SAC). The Company has submitted science-based scopes 1 and 2 reduction targets, joining global enterprises on the path towards net zero.



The Government

In August 2023, Taiwan Supervisory Commission R.O.C. (Taiwan) issued Roadmap for Taiwan listed companies to align with IFRS Sustainability Disclosure Standards. Listed companies are required to complete and disclose scopes 1 to 3 GHG emission inventory and verification in accordance with the stipulated timeline. FENC took immediate actions and planned accordingly. It is anticipated that scopes 1 to 3 GHG inventory and verification for all FENC subsidiaries on the consolidated financial statement will be completed in the first quarter of 2026, which is two years ahead of the required timeline. FENC is supporting governmental policies with actions.



The Public

The Temperature Rising Index for Pathways released by CommonWealth Magazine analyzed the carbon reduction targets set by 725 Taiwanese corporations pledging to limit global warming and estimated that only 94 have made sufficient commitment to meet the 1.5°C Paris Agreement goal. FENC is leading the industry with its 1.440°C pathway. The Company was invited to produce a video to advocate the cause, calling for more corporations to join in and protect Earth from the threat of global warming. In the video, Humphery Cheng, President of Corporate Management, presented FENC's carbon reduction targets, the process for target establishment and carbon reduction strategies. He also appealed for following advanced countries, including the European Union, with a required percentage of recycled raw materials in packaging products to create a green and circular lifestyle.



Supporting 1.5°C | FENC: Follow EU With Required Percentage of Renewable Raw Materials in Packaging (Chinese)

Suppliers and Customers

In 2023, FENC started collecting annual GHG emission data and reduction targets from the suppliers of main raw materials. The suppliers that have been providing the data account for 40% of the upstream emissions in scope 3, and their progress towards reaching the targets will be reviewed regularly. FENC will also continue with supplier engagement to expand the influence. On the customer front, FENC has been boosting efforts to promote low-carbon products to downstream suppliers as raw materials. The products are accompanied by product life cycle assessments to validate the carbon-reducing quality. FENC also formed R&D partnerships with downstream customers on the development of innovative and sustainable products. The knitting and dyeing plant of FEPV is increasing engagement efforts with brand customers such as Nike and adidas, providing information such as energy consumption data each month on the platform established by customers. The plant also developed carbon reduction strategies, committing to replacing 70% of coal with biomass fuels in 2024.

