

Delta Electronics

Internal Carbon Pricing Report

Road to Net-Zero



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Chief Sustainability Officer's Message

Climate change and global warming continue to impact the natural environment and people's lives, with effects ranging from physical operational risks such as extreme weather and natural disasters, to policies, regulations, carbon taxes, and the transition risks of customers or consumers switching to use and request low-carbon products and specifications. These can all cause potential impacts on corporate operations. At the same time, climate change also brings opportunities for low-carbon transition and green business for enterprises. Delta has long paid attention to climate change and adhered to our business mission: "To provide innovative, clean and energy-efficient solutions for a better tomorrow." We echo the commitments made in the Paris Agreement, actively aligning actions with international initiatives, and endeavoring to share our experiences and carbon reduction results. In this way, we are moving towards global net-zero together with our industry partners.

Since 2014, Delta has used internal carbon pricing (ICP) as an important tool to advance net-zero strategy and carbon management. In line with Delta's carbon reduction strategies and goals in different periods, we have combined this management tool with internal management systems to use specific monetization methods to internalize external impacts. Through the introduction of the internal carbon fee mechanism at the global level, we make each unit responsible for carbon emissions, embed the concept of "carbon pricing" in the operation, and motivate colleagues to participate in it. With actual carbon reduction actions, we create a positive and sustainable cycle inside Delta.

The carbon reduction results of Delta's internal carbon pricing in the current phase are apparent, and we continue to move towards the SBT Net-zero target. Through the successful introduction of internal carbon pricing, Delta can effectively respond to the changes of future regulatory and market transition risks, and strengthen our resilience to climate risks. Additionally, through proactive climate actions and global collaboration, we implement low-carbon transition plans, and endeavor to share our experiences to call on corporates across the globe to take action. Despite the evident price difference across the globe, we would recommend that all companies, regardless of price, set their own internal carbon prices. Then, based on the prices, corporates are able to establish the strategic goals and relevant schemes to promote practical actions and jointly move towards the net-zero goal.



1

Carbon Management Trends Towards Net-Zero Emissions

1.1 1.5°C global warming is imminent

1.2 Management through price-based quantity control

1.3 Create your own ICP mechanism with mastery of three key elements

1.1 1.5°C global warming is imminent

According to a report^{*1} published by the National Oceanic and Atmospheric Administration (NOAA) in mid-May 2023, the global average atmospheric carbon dioxide concentration in 2022 was 417.06 ppm, which marked 11 consecutive years of an increase in the concentration by more than 2 ppm each year. In May 2023, it even reached a record high of 424 ppm, which is close to the 430 ppm of carbon dioxide concentration that would cause global warming by 1.5°C with less than 5 years remaining. According to the IPCC **AR6 Synthesis Report**^{*2}, continued emissions will affect all major climate system components. As global warming intensifies, the impact of extreme weather events will continue to expand, and all countries and companies will face unprecedented or rare weather events and disasters. For example, the world experienced an unprecedented heat wave in 2023, with rare high temperatures and uncontrollable wildfires in countries in Europe, the Americas, Africa, and Asia. Many countries also experienced rare heavy rains and disasters. The negative impacts of these events have once again tested the resilience of societies in responding to climate issues, and ensuring net-zero emissions will be critical before we reach 1.5°C in global warming.



*1. Climate Change: Atmospheric Carbon Dioxide (<https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>)

*2. Synthesis report of the IPCC sixth assessment report (https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf).

1.2 Management through price-based quantity control

Reducing emissions is not a new concept. In the absence of a universal consensus, not everyone deems carbon reduction actions to be necessary. This is one of the reasons for the failure of the international community to effectively attain results in past carbon reduction initiatives. According to a report from the London School of Economics and Political Science^{*1}, economists unanimously agree that carbon pricing schemes based on the "polluter pays" principle for urging polluters to reduce greenhouse gas emissions into the atmosphere are considered the most effective way to reduce emissions in different countries. **State and Trends of Carbon Pricing 2024** released by the World Bank^{*2} shows that 75 countries and regions around the world have implemented carbon pricing within their jurisdictions, covering nearly 24% of the world's carbon emissions. These include Europe, China, Singapore, South Korea, and Japan, which use carbon price information as the basis for carbon emission trading or carbon fee collection. Taiwan also passed the "Climate Change Response Act" in January 2023 and levies fees for direct and indirect greenhouse gas emissions on large carbon emitters with more than 25,000 tons CO₂e per annum starting from 2025. The fees or mechanisms set by such carbon pricing regulations will indirectly increase the hidden cost of carbon for enterprises. According to **The Hidden Cost of Carbon** report published by PwC in 2023, the hidden cost of carbon derived from electronic components and products accounts for approximately 0.08% of the output value. If net-zero is used as the analysis scenario, the hidden cost will increase to 3.52%^{*3}. It shows that when companies fail to find effective ways to reduce emissions or change their business models, they will incur more external carbon costs.

In addition to state-level carbon taxes, carbon fees or establishing carbon markets to reduce emissions, companies often invest in carbon reduction programs, such as renewable energy, carbon credit, and the upgrade of energy-saving equipment to achieve carbon reduction targets. However, when considering reduction-related investments, companies often ignore how they generate profits. According to Reuters^{*4}, in order to strike a balance between reducing carbon emissions and increasing profits, it is advisable for companies to consider the external costs and internal costs of carbon emissions. Therefore, more companies have formulated "internal carbon pricing (ICP)" to set a price for carbon emissions within the company and internalize the external costs of greenhouse gas emissions. For enterprises, internal carbon pricing serves as a reference for internal investment decisions and provides incentives to accelerate low-carbon transition and innovation. It also helps them reach corporate carbon reduction targets. This application was included in the 2017 Task Force on Climate-Related Financial Disclosures (TCFD) recommendations, which advised companies to disclose indicators and targets. In 2023, IFRS S2 Climate-related Disclosures published by the International Financial Reporting Standards Foundation (IFRS Foundation) also included internal carbon pricing as a key indicator for companies' management of climate issues.

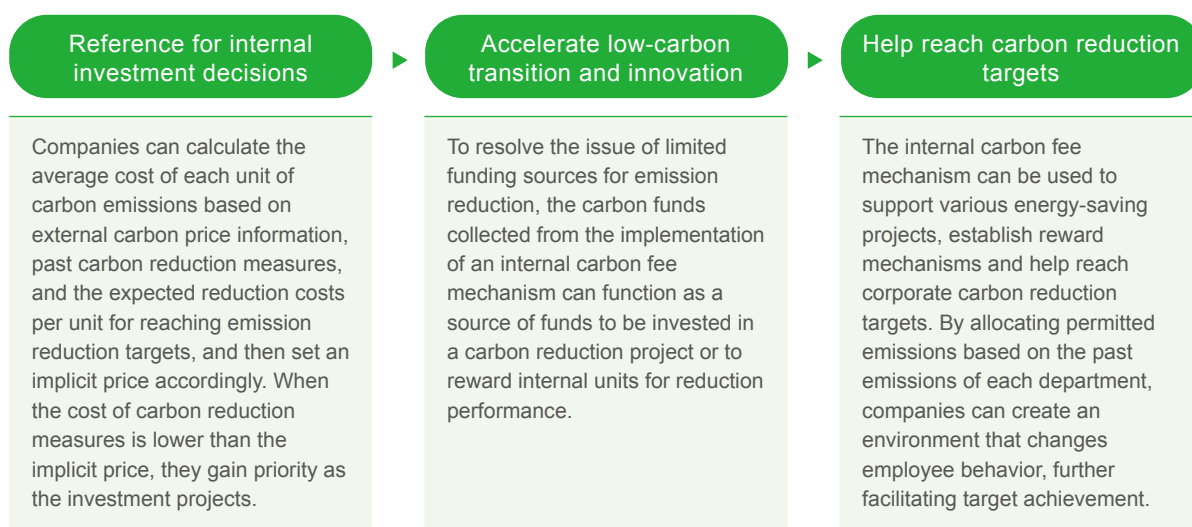
*1. What is a carbon price and why do we need one?
(<https://www.lse.ac.uk/granthaminstitute/explainers/what-is-a-carbon-price-and-why-do-we-need-one/#:~:text=A%20carbon%20price%20is%20a>)

*2. State and Trends of Carbon Pricing 2024
(<https://openknowledge.worldbank.org/server/api/core/bitstreams/253e6cdd-9631-4db2-8cc5-1d013956de15/content>)

*3. PwC (2023), The hidden cost of carbon
(<https://www.pwc.com/gx/en/issues/esg/the-hidden-cost-of-carbon.html>).

*4. Comment: Why internal carbon prices are key to aligning climate action with value-creation
(<https://www.reuters.com/sustainability/boards-policy-regulation/comment-why-internal-carbon-prices-are-key-aligning-climate-action-with-value-2023-09-11/>).

Impact of internal carbon pricing on companies



According to the ***State and Trends of Carbon Pricing 2023*** published by the World Bank in May 2023, approximately 15% (1,203 companies) of the 8,402 companies around the world that responded to the CDP questionnaire in 2022 have implemented internal carbon pricing. In addition, 18% of the companies stated that they will start implementing internal carbon pricing within two years. Although more and more companies have implemented internal carbon pricing, in a recent WBCSD climate peer problem-solving session, companies pointed out the challenges in implementing internal carbon pricing. These include how to determine an appropriate carbon price, gaining support from key decision makers, and the integration of the internal carbon pricing mechanism with the company's overall carbon reduction path, which are critical for the success of this mechanism.

Despite these challenges, internal carbon pricing has been adopted as a top-down carbon management tool. The diversity and possibilities of the system do not just internalize the carbon costs that companies have always ignored in the past, but also encourage employees to participate voluntarily in carbon reduction actions. This also provides an evaluation benchmark for internal investment decisions. For companies that have implemented long-term monitoring of carbon emission data but are unable to increase internal awareness on carbon reduction, internal carbon pricing serves as a viable management tool. In addition to the voluntary approach, companies can also think of the adoption from the information disclosure and legal compliance perspectives as internal carbon pricing is a recommended disclosure item required by the prevailing international disclosure guidelines and the regulations of competent authorities in Taiwan.

"If you want to do your job well, you must first sharpen your tools." The key elements for promoting an internal carbon pricing mechanism are provided below for companies to use as references in the design of their mechanism.

1.3 Create your own ICP mechanism with the mastery of three key elements

The three key elements in the overall design process of the internal carbon pricing mechanism include establishing goals and consensus, selecting application models, and setting the carbon price. With the mastery of these key elements, companies can do more with less.

Establishing goals and consensus

According to the 2022 CDP questionnaire, the top five main purposes of implementing internal carbon pricing are promoting low-carbon investment, improving energy efficiency, changing internal behavior, and identifying climate opportunities and stakeholder expectations. Establishing consistent targets for the internal system will increase the rationality of system design. However, regardless of the purpose of internal carbon pricing, a consensus must form among senior executives, financial, legal, procurement and IT personnel, as well as employees of each business group once the targets are confirmed to ensure that internal carbon pricing is incorporated into the company's sustainable development strategy and improve the company's overall carbon risk management.

Selecting suitable application models

Once the targets and consensus are set, appropriate application models can be selected based on the targets. The four common forms of internal carbon pricing include the shadow price, implicit price, carbon fee, and internal trading. The concepts of the implicit price and shadow price are derived from economic concepts and are used as tools for investment evaluation by senior executives. The design of the internal carbon fee and internal emission trading system is linked to the overall management structure and cash flow of the company, which allocates the responsibilities of all emission reduction and resources of the company to different business units and departments.

Of the companies that responded to the CDP questionnaire in 2022, 15% have implemented internal carbon pricing. Shadow price was the most common form, accounting for approximately 68% of all companies that have implemented internal carbon pricing. As it does not necessitate cash flow within the company, the implementation costs are relatively low. For instance, a global consumer goods manufacturer uses the shadow price to incentivize the company to reduce carbon emissions. The company sets the shadow price of 70 Euros per ton and uses it when there are projects with a total investment of more than 1 million Euros. The carbon price is used as a reference for investment and expenditure decisions to increase the efficiency of investments for reducing emissions.

List of internal carbon pricing application models

Type	Form of carbon price application	Description	Operation model	Benefits
Investment decisions	Shadow price	Hypothetical cost of carbon emissions	Shadow price is the most common way to help companies understand the impact of climate-related risks due to changes in technologies or future regulations. Companies can simulate different carbon prices and incorporate the cost of carbon emissions and benefits of emission reduction into their investment analysis.	Companies can use carbon cost as one of the factors for future investment decisions to help companies identify emission reduction plans that offer better investment returns.
	Implicit price	Quantification of capital investments needed to achieve climate-related goals	The implicit price helps companies understand their initial carbon footprint and can also be used as a reference for decision-making in carbon reduction investments.	
Corporate internal management	Carbon fee	A per-unit carbon fee based on the company's greenhouse gas emissions	Companies set and charge actual fees for the carbon emissions of internal business departments, establish an actual fund pool, and use the income to reward units with better carbon reduction performance or invest in carbon reduction plans with higher energy efficiency and renewable energy projects to achieve carbon reduction goals.	The expenditures and income of internal carbon fees incorporate the hidden costs of carbon into the company's internal management procedures. They also help the company monitor financial planning details for climate strategies such as operating costs and capital expenditures.
	Internal emission trading	Allows business units of the company to trade carbon credits based on their emissions	After the company sets its carbon reduction targets, it sets and allocates limited emission credits to each unit placed under management. If a unit's emissions exceed the limit, it must purchase additional credits, which increases the emission reduction awareness of the unit.	

Setting a suitable carbon price

How much is a ton of carbon worth to a company? There often exist different opinions in a company and it is difficult to reach a consensus. However, companies can start with the following sources when implementing the carbon price assessment for the internal carbon pricing mechanism. After comprehensive evaluations and thorough internal communication, it should be able to set a carbon price suitable for the company.

List of sources for setting the carbon price

Type	Description	Source of reference data
Carbon price under regulatory management	Refers to the regulatory requirements of the place of operation, such as the fines for violations specified in regulations, the current price of carbon per ton in the carbon market, and the possible price of carbon per ton in the future carbon market.	1 The International Carbon Action Partnership's interactive map provides information on carbon markets around the world https://icapcarbonaction.com/en/ets 2 World Bank Carbon Pricing Dashboard provides the latest information on carbon prices in different countries https://carbonpricingdashboard.worldbank.org/, and regularly publishes carbon price reports, which cover carbon emission trading systems and prices in different countries 3 World Carbon Price Database established by the Resources for the Future research institution https://www.rff.org/publications/data-tools/world-carbon-pricing-database/
Social cost of carbon, SCC	The data is a monetization indicator based on overall evaluations using different models and mechanisms. It refers to the economic loss caused to the world or a region by one metric ton of carbon dioxide emissions.	1 Country-level Social Cost of Carbon for Taiwan published by the Chung-Hua Institution for Economic Research in 2021 https://www.cier.edu.tw/publish/books/detail/3935 2 Article published in Nature by Kevin Rennert et al. in 2022: Comprehensive evidence implies a higher social cost of CO₂ https://www.nature.com/articles/s41586-022-05224-9 3 An interactive web page designed and developed by L. Drouet et al., which was also published in the article "Country-level social cost of carbon" in Nature Climate Change in 2018 https://country-level-scc.github.io/csc-web-2018/#/ csc?ssp=SSP2&rcp=rcp60&dmg=bhm_sr&discounting=growth%20adjusted&iso3=RUS%EF%BC%8C and https://www.nature.com/articles/s41558-018-0282-y 4 Social Cost of Carbon Explorer estimation model established by the Resources for the Future research institution https://www.rff.org/publications/data-tools/scc-explorer/
Industry carbon price	Refers to the carbon prices set based on the ICP mechanism in different industries	1 Research report published by CDP https://cdn.cdp.net/cdp-production/cms/reports/documents/000/005/651/original/CDP_Global_Carbon_Price_report_2021.pdf 2 CDP questionnaires for companies https://www.cdp.net/en/guidance 3 Report published by McKinsey & Company in 2021 https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/the-state-of-internal-carbon-pricing
Past carbon reduction costs	Capital investment necessary for reducing one ton of carbon emissions based on company records	Corporate internal information
Cost of mitigation	Price of purchasing renewable energy or carbon credits by a company	Corporate internal information

Estimates for carbon price from different organizations

In addition to considering the different sources of carbon prices, companies also want to know the reasonable price for one ton of carbon emissions. From an overall global perspective, the carbon price based on the assumption of net-zero emissions shows that the carbon prices under all scenarios are significantly higher than the current prices actually implemented by all parties.

1

According to the IPCC Sixth Assessment Report (IPCC AR6)^{*1}, in mitigation pathways likely limiting warming to 2°C, marginal abatement costs of carbon are about USD 90/tCO₂ in 2030 and about USD 210/tCO₂ in 2050; in pathways that limit warming to 1.5°C with no or limited overshoot, they are about USD 220/tCO₂ in 2030 and about USD 630/tCO₂ in 2050^{*1}

2

The International Energy Agency (IEA) stated in its World Energy Outlook 2023 report that under net-zero emission conditions, the average carbon price in developed economies is expected to rise to USD 250/tCO₂ by 2050, while the average carbon price in emerging markets and developing economies is expected to rise to USD 200/tCO₂^{*2}

3

The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) scenario simulation suggests that a shadow carbon price of around USD 200/tCO₂ would be needed by 2030 and USD 600/tCO₂ by 2050 to incentivize a transition towards net zero^{*3}

4

According to estimates by the Getting to Zero Coalition, to incentivize countries to switch to zero-emission fuels, the carbon price must be increased to nearly USD 100/tCO₂ by 2030 and increased to nearly USD 230-260/tCO₂ between 2035 and 2045. To achieve the goal of net zero by 2050, the carbon price should be increased to USD 360/tCO₂^{*4}

The current state of internal carbon pricing of companies paints a different picture. According to **State and Trends of Carbon Pricing 2023**, the variation of internal carbon price within companies is quite significant, with carbon prices ranging from USD 0.01 to USD 3,556/tCO₂. Among these companies, only 146 companies (13%) disclosed that their internal carbon prices are higher than USD 100/tCO₂ and most are below USD 130/tCO₂. These prices are below the recommended price of the High-Level Commission on Carbon Prices for compliance with the Paris Agreement. In conclusion, the results show that a higher carbon price is not necessarily better. Based on the implementation and prices declared by many companies, they do not have a fixed price range when setting carbon prices. Carbon prices are generally determined based on comprehensive reviews of the objectives of internal carbon pricing, carbon price application model, and corporate culture. However, companies must also recognize that carbon prices are not static. Companies should conduct continuous reviews and adjustments based on changes to systems and requirements for reaching targets.

*1. IPCC AR6 WGIII Chapter 03 (https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter_03.pdf)

*2. World Energy Outlook 2023 (<https://iea.blob.core.windows.net/assets/86ede39e-4436-42d7-ba2a-edf61467e070/WorldEnergyOutlook2023.pdf>)

*3. NGFS Scenarios for central banks and supervisors (https://www.ngfs.net/sites/default/files/medias/documents/ngfs_climate_scenarios_for_central_banks_and_supervisors_phase_iv.pdf)

*4. Closing the Gap An Overview of the Policy Options to Close the Competitiveness Gap and Enable an Equitable Zero-Emission Fuel Transition in Shipping (https://downloads.ctfassets.net/gk3lrimlph5v/59HXJAslzktuUzZhbBzXM/578a6499f83f192fde6b05a4eb5e4a3c/Closing-the-Gap_Getting-to-Zero-Coalition-report.pdf)

Internal carbon pricing mechanisms^{*1}

Companies can examine the risks and carbon reduction goals they face in four dimensions, including price level (height), greenhouse gas emission scope (width), impact on enterprise operations (depth), and carbon reduction development history (time), to develop an internal carbon pricing mechanism.

Height Price level

Height refers to the price level per unit of greenhouse gas emissions used by companies for making decisions on operations. For example, companies may need several carbon prices to predict future regulatory prices in different regions of the company's operations. They also incur development costs for innovative technologies, products, and services to ensure that it can increase its market competitiveness, and these costs are included in the carbon price. Companies at this stage must consider whether adjustments are required for the internal carbon pricing to comply with their progressive carbon reduction targets.

Width

Scope of greenhouse gas emissions

Companies usually focus on two parameters — price level (height) and emission range (width) — for the internal carbon pricing. The width refers to the scope and boundaries of greenhouse gas emissions, such as emission gas categories and emission categories (direct, energy indirect, or other indirect emissions). Companies at this stage can review whether adjustments are required for the scope and boundaries of internal carbon pricing to cover their primary sources of greenhouse gas emissions.

Depth

Impact on business operations

The depth refers to the degree of impact of internal carbon pricing on the business decisions of the company and its value chain partners. In terms of mechanism design, the importance of internal carbon pricing in business decisions must be considered. In terms of implementation, companies must consider the extent to which internal carbon pricing is incorporated into decision-making and its implementation. Companies can also consider the following questions at this stage:

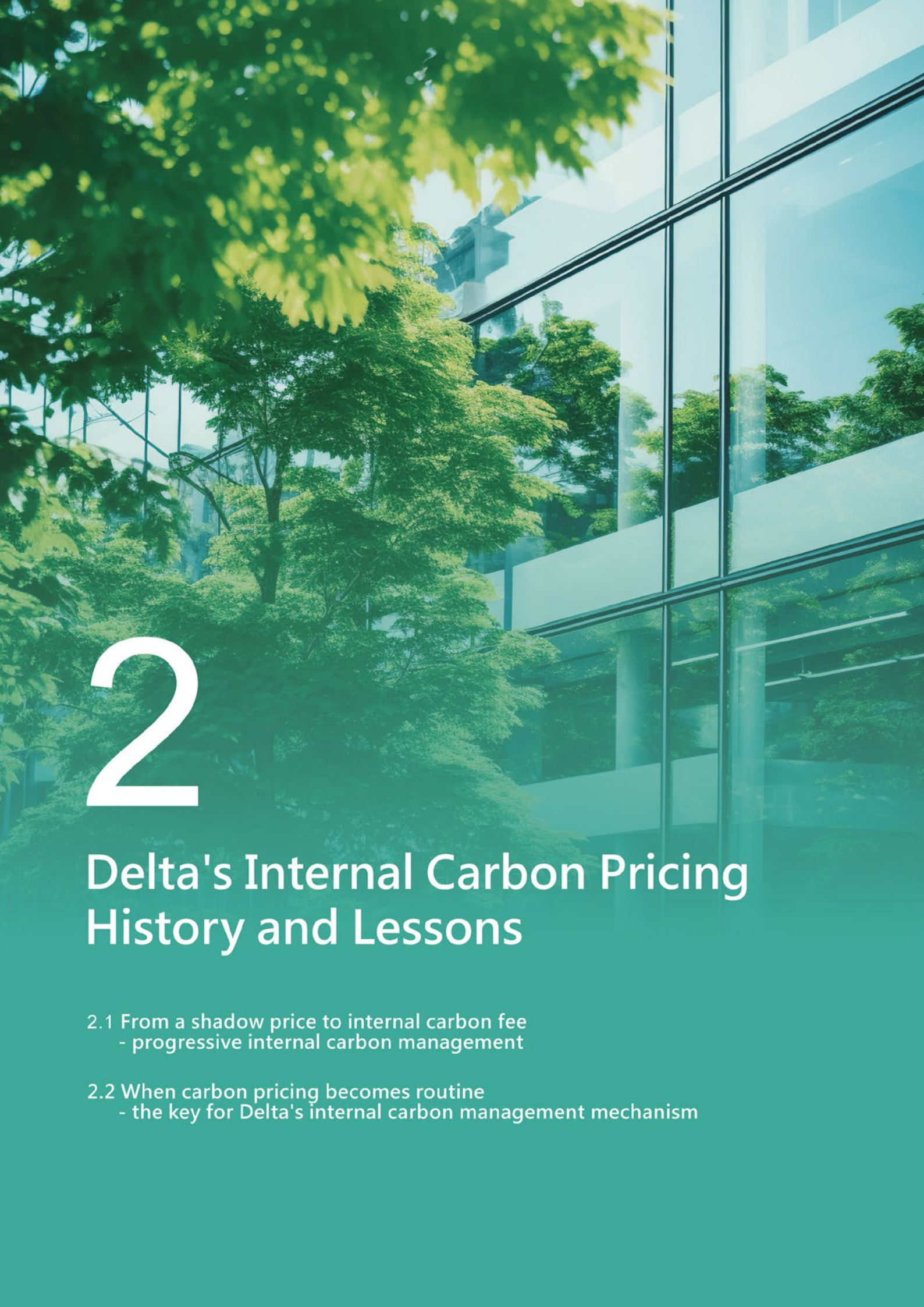
- ① Which corporate operational decisions will be affected by internal carbon pricing if the company seeks to address emission hotspots within the value chain?
- ② How can internal carbon pricing be integrated into business operations and become a mainstream issue in decision-making?
- ③ What business decisions has internal carbon pricing impacted within the company or with its value chain partners so far?

Time

Carbon reduction development history

The time refers to the changes in the first three dimensions (pricing, impact, and scope), which are usually continuously adjusted with changes in the carbon reduction actions and internal and external pressures of companies. At this stage, companies can think about readjustments of their internal carbon pricing methods over time to align their current operating conditions with the implementation of external climate policies.

^{*1}. HOW-TO GUIDE TO CORPORATE INTERNAL CARBON PRICING (<https://cdn.cdp.net/cdp-production/cms/reports/documents/000/002/740/original/cpu-2017-how-to-guide-to-internal-carbon-pricing.pdf?1521554897>).



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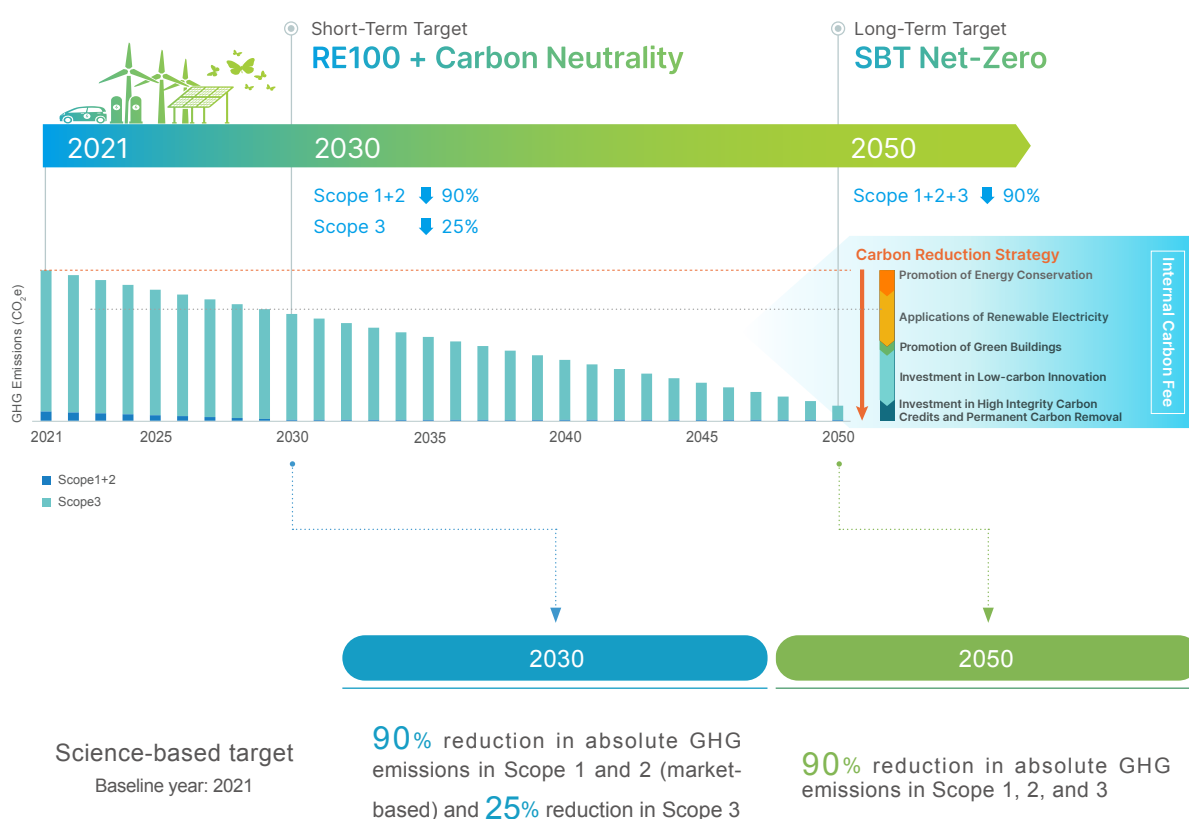
Delta's Internal Carbon Pricing History and Lessons

2.1 From a shadow price to internal carbon fee
- progressive internal carbon management

2.2 When carbon pricing becomes routine
- the key for Delta's internal carbon management mechanism

2.1 From a shadow price to internal carbon fees - progressive internal carbon management

Delta has continuously used its core competencies in power electronics and taken real actions to support sustainable development in its daily operations for more than 50 years. The business philosophy of "To provide innovative, clean and energy-efficient solutions for a better tomorrow" has become an essential part of employee values. Delta is committed to carbon reduction initiatives and promotes carbon reduction actions, including signing and joining the We Mean Business Coalition in 2015^{*1}, introducing medium and long-term targets with Science-Based Targets (SBT) for the first time in 2017, participating in the EV100 initiative in 2018, and promoting RE100 and carbon neutrality in operations since 2021.



Carbon reduction initiatives



RE100

100% use of renewable electricity at global operations by 2030



EV100

Providing charging facilities at Delta's operations and production plants within the scope of its global energy management, and converting company vehicles to electric vehicles such as battery electric vehicles and hydrogen vehicles by 2030

^{*1}. Founded in 2014, We Mean Business is a global non-profit organization that cooperates with the world's most influential companies to take joint action on climate change. Visit the following website for more information on the organization: <https://www.wemeanbusinesscoalition.org/about/>

Delta's Internal Carbon Pricing progress

Delta adopted the internal carbon pricing mechanism to enhance incentives for reducing carbon emissions and improve the internal carbon management mechanisms. By starting with a shadow price, we progressed from considering applications for carbon reduction decisions to the internal carbon fee mechanism. We continue to implement energy efficiency projects, use renewable electricity, promote green building, invest in low-carbon innovations, carbon offsetting and permanent removal, as Delta actively move toward the goal of SBT Net-Zero.



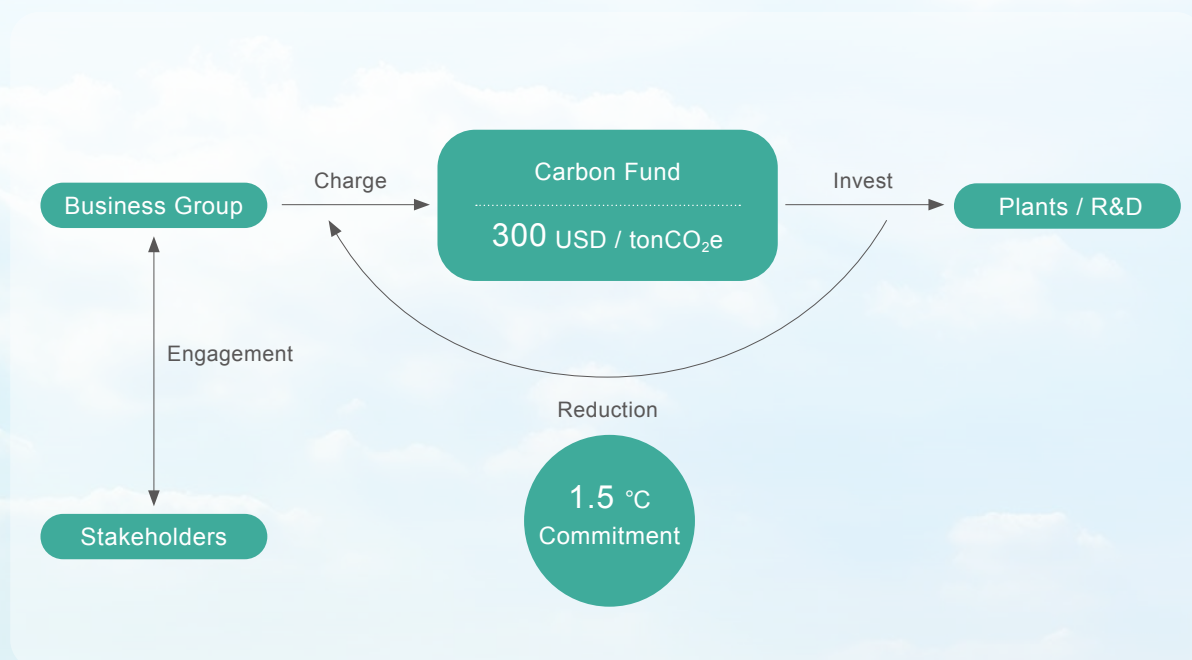
① Shadow price period: Reference for carbon reduction decision-making

Delta has long been concerned about climate change and global warming issues, and is committed to energy efficiency and carbon reduction. We have adhered to the concept of "carbon pricing" internally, and introduced a carbon pricing mechanism to fulfill Delta's net-zero commitment. Therefore, as early as 2014, in response to international trends and with reference to Delta's global carbon markets and regulations, we gradually **set the internal carbon price for each region** to internalize the external costs of carbon emissions and actively respond to the impact of climate change. In 2017, Delta **set a unified global carbon price** of USD 50 per ton in response to international trends and introduced the concept of a carbon payback period. When we make energy-saving investment decisions, the benefits of carbon reduction are used as one of the evaluation indicators.

② Internal carbon fee period: Strengthen carbon reduction efforts

In 2021, Delta launched the internal carbon fee mechanism for all global operations with the support of the management team to actively implement its net-zero commitment, strengthen carbon reduction efforts, and expand low-carbon business opportunities. The internal carbon price was set at a global rate of USD 300 per metric ton. This price is in line with the expected carbon price in the IPCC AR6 for limiting global warming to 1.5°C in 2030. According to the greenhouse gas inventory results over the years, Delta's Scope 1 and 2 greenhouse gas emissions consist mainly of Scope 2 emissions. Therefore, Delta's greenhouse gas reduction strategy focuses on energy management and is supplemented by the introduction of renewable electricity. With the implementation of the internal carbon fee, Delta charges business units a carbon fee of USD 300 per metric ton based on their carbon emissions and directs the fee into the global carbon fee fund. The fund is then used to invest in the development of renewable energy technology, energy and resource management, and low-carbon innovation to form a positive sustainable cycle.

Internal Carbon Fee Framework



2.2 When carbon pricing becomes routine - the key for Delta's internal carbon management mechanism

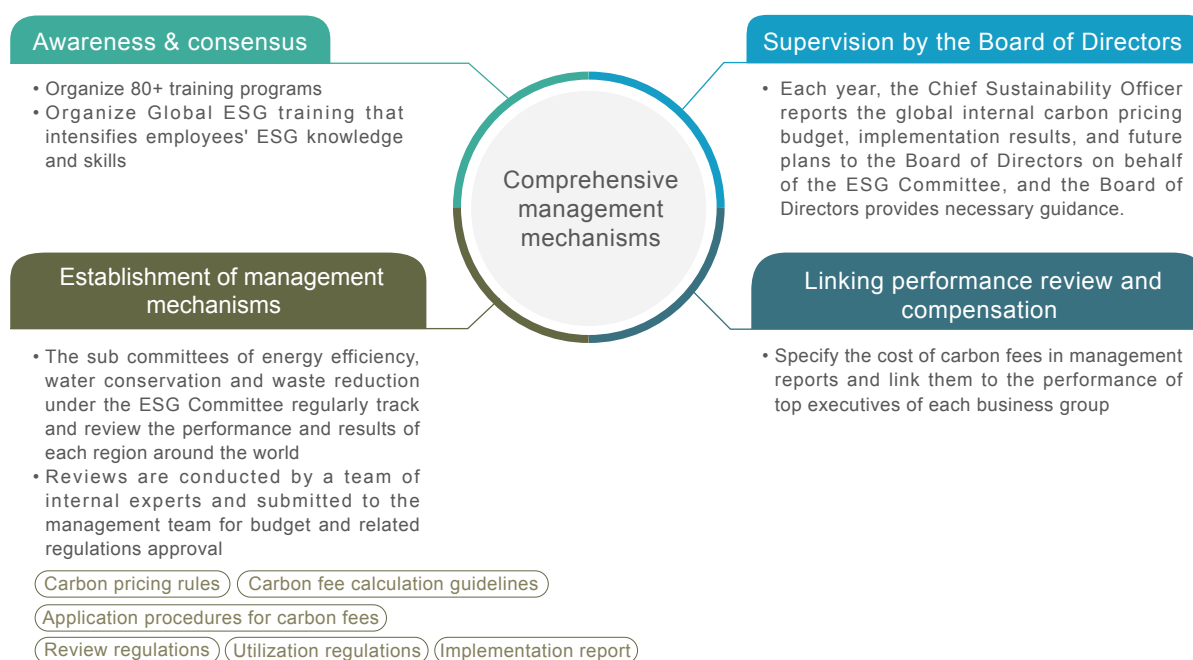
2.2.1 Establishing goals and consensus

Delta has participated in various initiatives since 2014, and has gradually integrated carbon reduction awareness and target management into its operations, such as the commitments to We Mean Business. As Delta reached the medium-term science-based target (SBT) four years ahead of schedule in 2021, we understood that the next phase of our net-zero commitment required strengthened carbon management and carbon reduction efforts as well as accelerated low-carbon transition and innovation. Instead of just providing reference information for decision-making and communication, Delta aimed to introduce a comprehensive global carbon fee collection, budgeting, and management mechanism, and link it to management performance and communicate the concept of "carbon pricing" internally. We hope to drive direct behavioral changes and encourage the consideration of climate-related issues in decision-making to accelerate the implementation of carbon reduction measures.

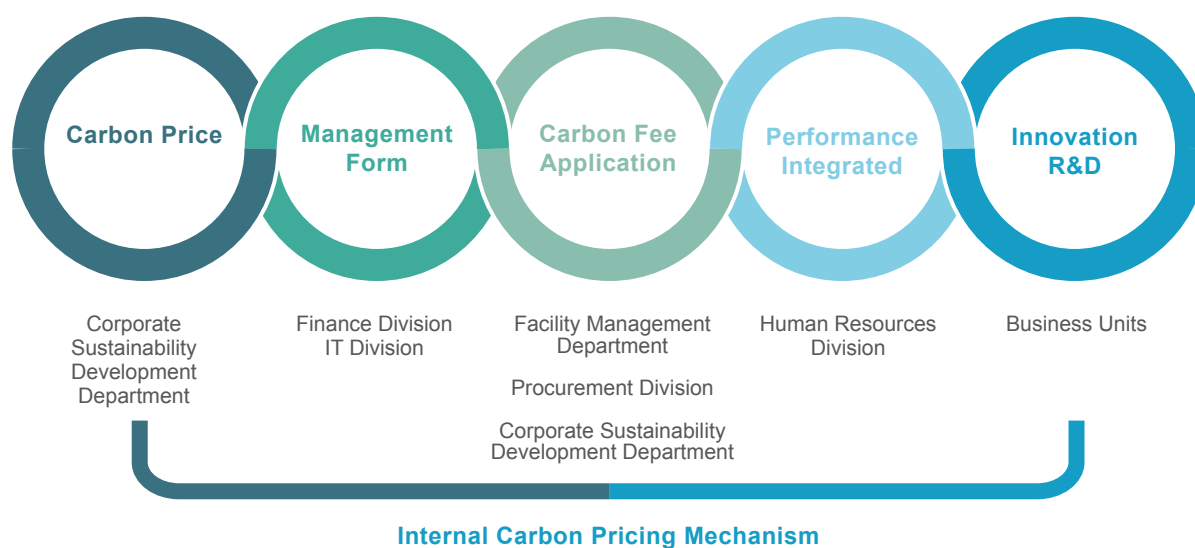
2.2.2 Multi-pronged mechanism design

Delta's internal carbon pricing mechanism collects carbon fees from business groups and units at a rate of USD 300 per metric ton and includes the collection in a global carbon fee fund. As Delta's operations span across the globe, a comprehensive internal carbon fee management must link all business units, as well as merged and acquired companies. Delta started with changing our operational and management framework, redesigning the financial systems and reporting, including accounting, budgeting, and expenditure management analysis in the early periods. Then we progressed to new system expansion, optimization and concept establishment such as the carbon fee collection principle, encouraging the development of low-carbon and renewable energy projects with these fees. We also encourage the integration of climate-related issues into risk assessment and decision-making processes. Deepening the awareness of carbon reduction into employees' daily routine, and developing each phase of the work are great challenges.

Delta officially introduced the corresponding management systems and tools across the globe after continuous communication and cooperation among the Corporate Sustainability Development Department, Finance, Procurement, and IT Divisions. To effectively connect carbon management and performance, the carbon fees charged by the internal carbon pricing mechanism are specified in monthly management reports and linked to the performance of the top executives of each business group to facilitate internal behavioral changes and accelerate carbon reduction actions.

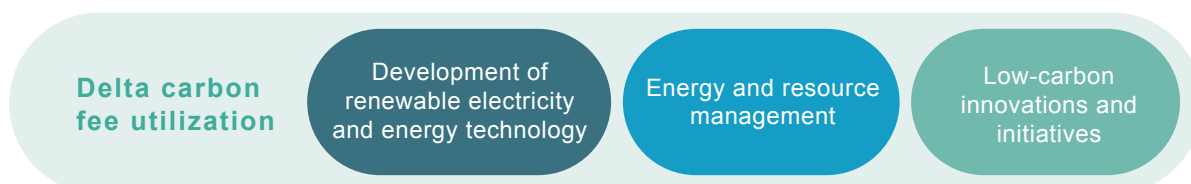


Establish Cross-departmental Collaborative Mechanism

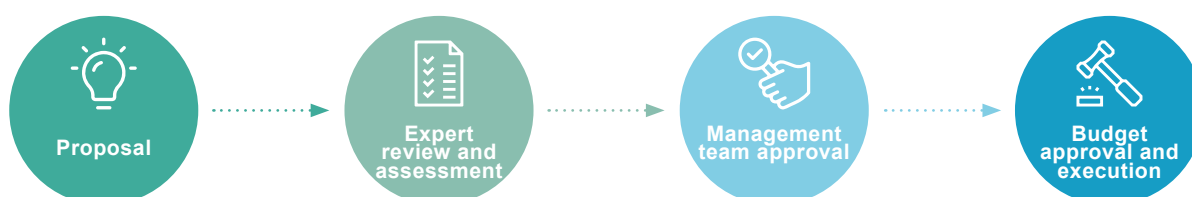


Utilization scope and review mechanism

The carbon fee fund is earmarked for special use with clearly defined scope and targets of use. The three major areas of use are renewable electricity and energy technology development, energy and resource management, and low-carbon innovation and initiatives. The development and innovation of science and technology plays an important role in the process of global low-carbon transition and sustainable development. Therefore, Delta encourages the development of low-carbon technologies, products, and solutions in accordance with our carbon fee utilization regulations as a way to achieve a positive sustainable cycle. The carbon fee fund therefore invests in projects such as self-built solar energy facilities, energy-saving projects in plants, upstream value chain emission reduction and application research and development for circular economy. We hope to create business opportunities through the research and development of low-carbon innovation and work with customers and the world to move towards net zero.



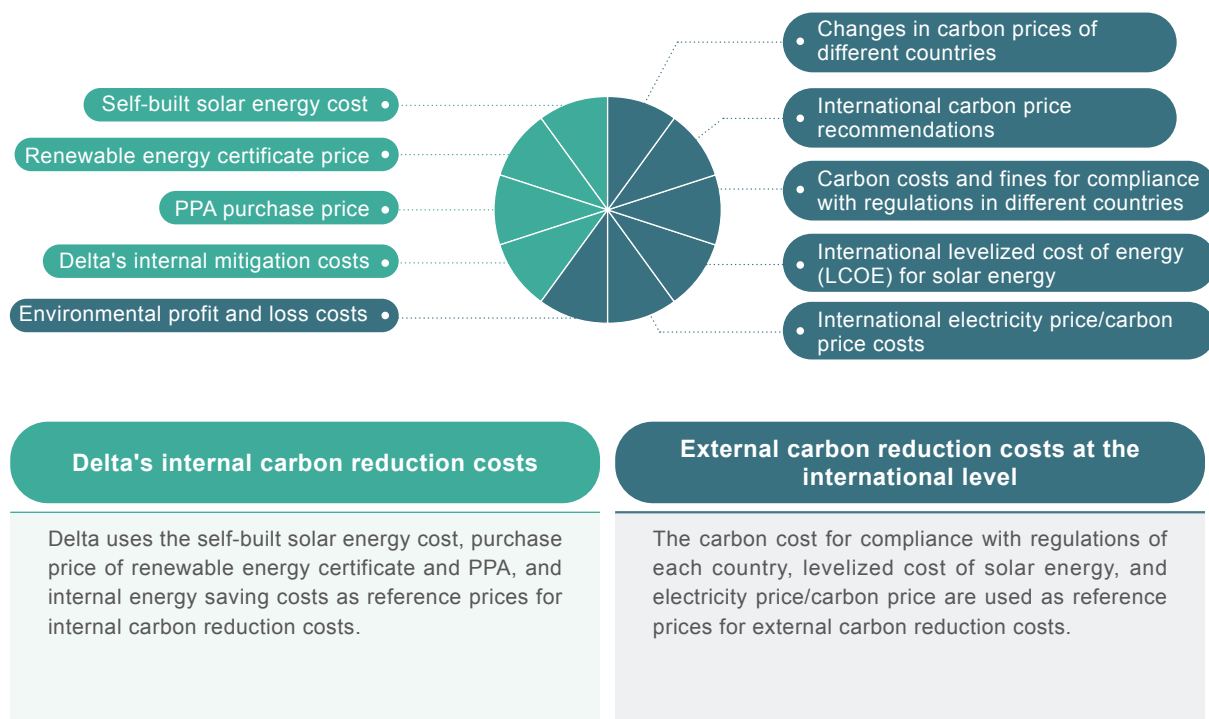
In addition to defining carbon fee utilization, Delta has also established the review principles and annual budgeting for carbon fee fund utilization to ensure that each budget is carefully evaluated and in line with our carbon reduction strategy and goals. Proposals from all units are reviewed by internal expert groups from renewable energy, energy saving, water conservation, waste reduction, low-carbon transportation, and energy storage backgrounds. After careful technical evaluation and consideration of the long-term environmental benefits before and after the investment, the proposals are submitted to the management team for budget approval before final inclusion into the budget as expenditures from the carbon fee fund. The subcommittee of energy, water conservation and waste reduction under the ESG Committee regularly reviews the rate of budget achievement in each region to ensure the strategic adjustment for emission reduction measures.

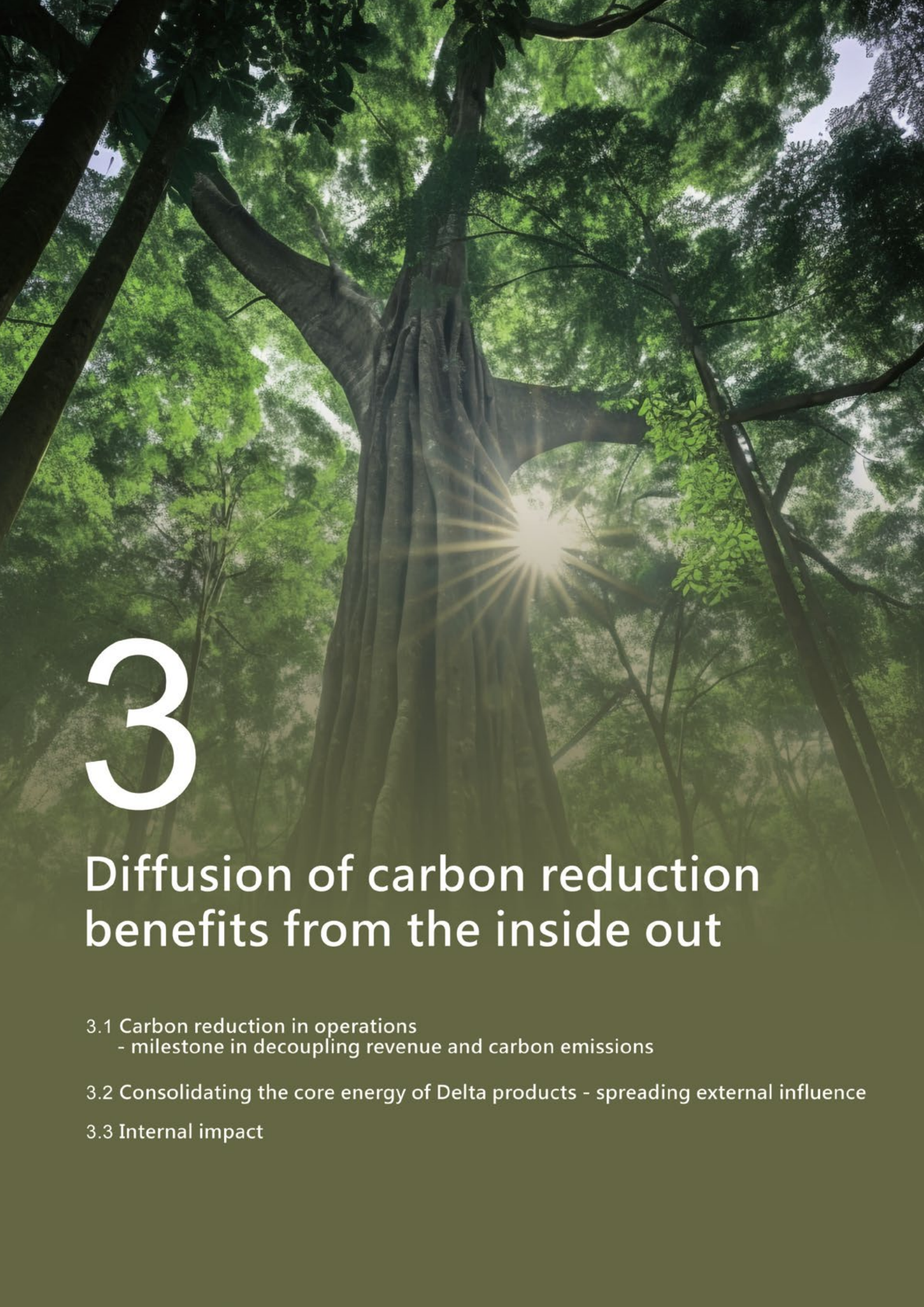


As the Company continues to strengthen employees' carbon reduction awareness and the ESG culture, we receive nearly 500 proposals from employees around the world every year. With continuous training and advocacy, we continue to communicate and review key points and methods for quantifying the benefits of carbon reduction actions. The original decision-making process only accounted for the economic benefits of the investment and we gradually included quantified environmental benefits of energy saving and carbon reduction. Delta also uses the global ESG courses to provide employees of all departments with the necessary knowledge and skills for sustainability, and strengthens employees' capacity to implement Delta's net-zero targets in their decision-making process and routine operations. For example, the courses on product carbon footprint and circular economy are provided for employees in procurement, R&D, facility, and sales departments to explain the carbon emissions of products or services in the life cycle stages and help them identify business opportunities for process improvement, energy saving, and carbon reduction.

2.2.3 Determine a suitable carbon price for Delta

Delta regularly updates and evaluates its internal carbon price every year in response to changes in international trends, market regulations, and regulatory oversight. The price is announced and operationalized under the supervision of the ESG Committee. It is evaluated based on the internal and external carbon costs of global manufacturing sites, including regulatory fines, emissions trading prices, corporate benchmark, as well as the company's investment in renewable energy solutions and purchase, and energy efficiency measures.





3

Diffusion of carbon reduction benefits from the inside out

3.1 Carbon reduction in operations

- milestone in decoupling revenue and carbon emissions

3.2 Consolidating the core energy of Delta products - spreading external influence

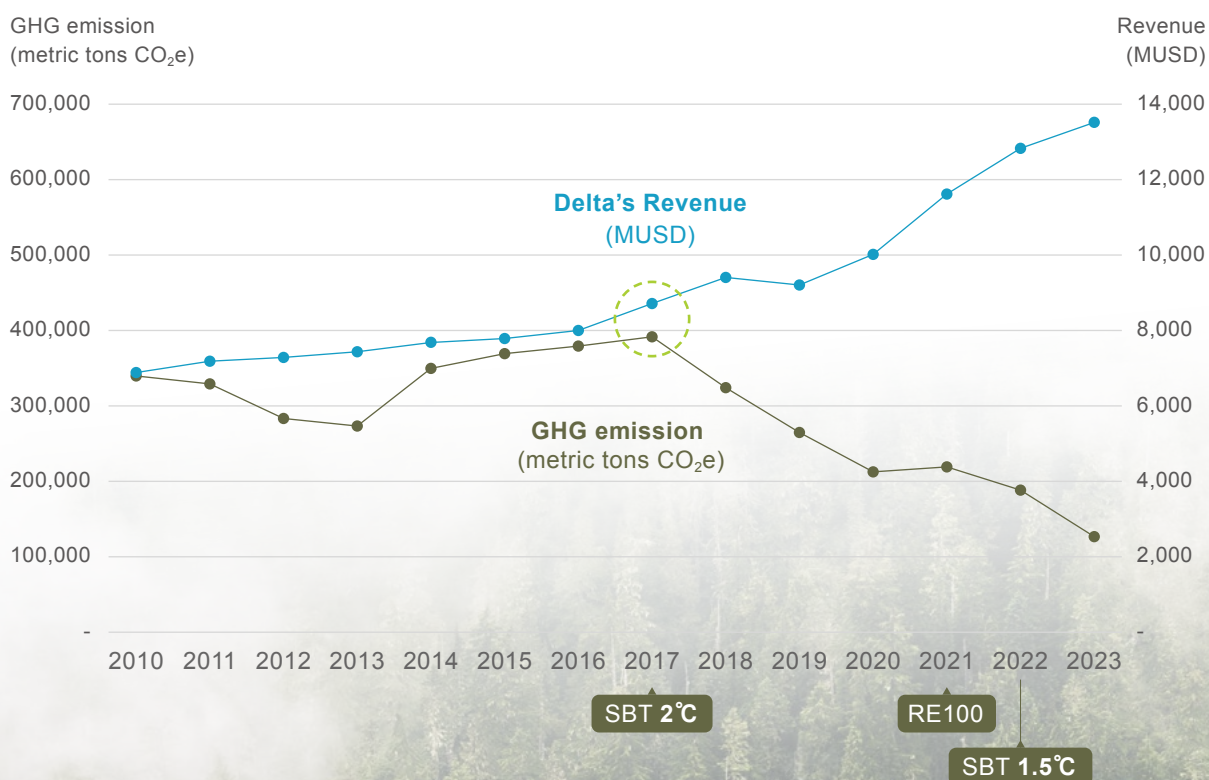
3.3 Internal impact

3.1 Carbon reduction in operations – a milestone in decoupling revenue and carbon emissions

2022 was the first year Delta fully implemented the internal carbon fee mechanism globally. The effectiveness of this mechanism in driving the achievement of the net-zero goal has been gradually reflected. The most significant outcome is that the direct and indirect greenhouse gas emissions (market-based) of Delta's global operations in 2022 decreased by 13.5%, emissions (location-based) fell by 16.2%, compared to 2021. Until 2023, Delta's direct and indirect greenhouse gas emissions (market-based) were reduced by 39% compared to 2021.

In 2023, Delta implemented a total of 410 energy-saving projects, which was more than the 309 projects implemented in 2022. Among 410 projects, there were 377 ones gaining support of internal carbon fees. These projects saved more than 48 million kWh, which is equivalent to reducing carbon emissions by approximately 36,297 metric tons. In addition, Delta strategically links different renewable energy types with the internal carbon fee mechanism, encouraging each region to prioritize renewable electricity for self-use and with bundled energy attribute certificates (EACs). Through Delta colleagues' joint efforts in all regions, the renewable electricity usage rate at global operations had reached 76% in 2023, and continues to move towards the goal of 100% renewable electricity use in 2030.

Delta's revenue growth and carbon emissions have been decoupled



3.2 Consolidating the core energy of Delta products - spreading external influence

Delta has identified three main scopes for the utilization of the internal carbon fee fund, including development of renewable electricity and energy technology, energy and resource management, and low-carbon innovation and initiatives. Since the mechanism was launched in 2021, it has successfully created key applications and results for Delta, including the deployment of energy storage systems and development of innovative products. Carbon reduction actions are no longer confined to operational level, but have become new business opportunities for Delta.

Case Study

Energy storage case: Demonstration at Wujiang Plant

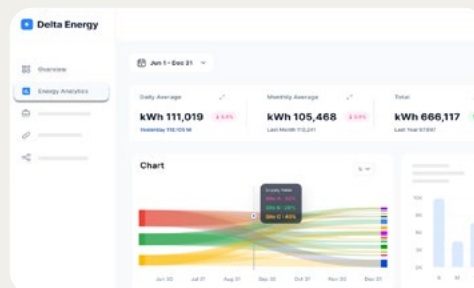
Delta's Wujiang Plant has built a 15 MWh energy storage station equipped with the DeltaGrid® energy management solution. It was commissioned in May 2023, and we estimate to arrive at a payback period of seven years for this investment.



Investing in energy storage systems at key plants in different regions with the internal carbon fee is a practice for Delta to improve energy efficiency. It offers benefits such as peak shaving, optimizing energy management and self-use of renewable energy in plants, as well as an emergency backup power supply for plants. As Delta implements RE100 and EV100, the energy storage systems can also be used as auxiliary facilities for solar power generation in plants or office buildings, and as a regulating device for electric vehicle chargers for employees and visitors. They reduce the imbalance between supply and demand of renewable energy, and provide microgrids in buildings or plants with alternative energy solutions during peak energy consumption periods to decrease the dependence on the grid and also electricity expenditures. In addition, if an anomaly occurs in the local grid, the energy storage system can also be used as an emergency backup power source to maintain the power supply to Delta's plants or office buildings and ensure stable operations. Certain project sites are also equipped with Delta's DeltaGrid® energy management solution, which provides real-time access to energy generation, energy storage, and electricity consumption information. Energy storage and management systems are key solutions and demonstration for Delta's energy infrastructure solution business group.

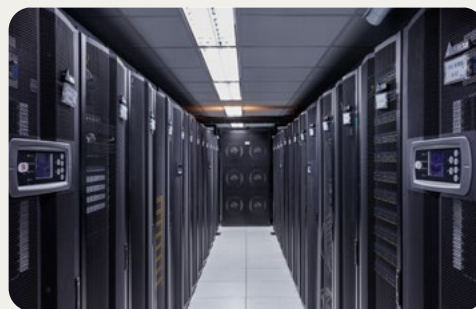
Matching program for renewable energy

The international community is accelerating the decarbonization of power grid through 24/7 Carbon-Free Energy Initiative (24/7 CFE). Compared with the traditional 100% renewable energy goal, 24/7 CFE focuses on the matching among time, regionality and renewable electricity. This would ensure that the electricity used per hour features carbon-free. In Taiwan, the renewable electricity matching system requests a 15-minute interval to match real-time electricity consumption and generation. Under the trend, we developed the renewable energy matching program with the support of the carbon fee fund in 2022. This innovative energy solution effectively monitors, manages, and regulates energy distribution to improve efficiency and reliability. With data as the core, it provides power plants and renewable energy users with optimized services of prediction, analysis, and matching. It helps resolve difficulties for companies in matching renewable electricity during the low-carbon transition and reduces the risks of ineffective allocation of resources. It has become a case study of low-carbon innovation business opportunities that utilizes the internal carbon fee fund.



AI technology to simulate heat dissipation and energy saving for data centers

In 2023, under the support of internal carbon fees, Delta developed the AI cooling energy saving (ACES) for data centers. Through the physical modeling and simulation of three-dimensional digital twin, we simulated the hot and cold aisles enabling dissipation for data centers, and constructed an efficient as well as accurate virtual and real fields under multi scenarios to replace the testing in real environments. It enables us to figure out the best configuration for facilities or suggestion about adjustment. The ACES has been successfully deployed on our data centers in Delta's global headquarters. It helps decrease the value of power usage effectiveness (PUE) of the data centers to 1.26 under the best scenario, from 1.32, the original average value. With the decrease, we estimate to reach energy saving by 9.24% and reduce carbon emissions by 25.1 metric ton every year.



Taiwan Innovation Green Economy Roadmap Project

TIGER (Taiwan Innovation Green Economy Roadmap) project is a two-year research project jointly conducted by Delta and the Massachusetts Institute of Technology (MIT). With the support of internal carbon fees, this project invites MIT to share topics including carbon emission investigation and trading strategies, the economic and industrial impacts of different decarbonization and carbon sequestration pathway, and research results related to corporate carbon reduction technologies and business development through 16 online seminars and 4 physical workshops. It successfully furthers Delta's R&D and drives business units to plan corporate carbon reduction strategy. It also initiates in-depth research on carbon emission-related technologies and industry development, helping Delta get involved in the development of global energy industry with the mastery of expertise.

RE100 case: Self-built solar energy systems on plants of China

Delta's plants and buildings in China expand the installed capacity of rooftop solar power with internal carbon fees. As of the end of 2023, the total installed capacity was 34.4MW, an increase of 19.7MW from 2021. In 2021, Delta announced it would become a RE100 golden member, committed to achieving 100% renewable electricity by 2030 at all operations around the world. To this end, Delta strategically combines it with the carbon fee application principle and sets priorities for carbon reduction strategies, including energy saving measures, and self-consumption of renewable electricity. With the support of internal carbon fees, Delta has built or upgraded existing rooftop/ground-type solar power generation systems at its global operations.



RE100 case: Self-built solar energy systems on buildings in India

In 2023, India's rooftop solar power installation capacity was 1.97MW, with the self-consumption of electricity reaching 1.57 million kWh. With the support of internal carbon fees, a solar power system was installed at a Delta office and R&D building in Bangalore.



Energy conservation in the production plant**● Plant process cooling water**

The compression chiller on the production line with regular compression refrigeration was replaced by a system that uses cooling water from plant processes. This solved the problems of the original compression chiller such as the high energy consumption, occupation of space, and high ambient temperature in the workplace as a result of poor heat dissipation. The improvement saves energy, reduces consumption, and improves the use of space on the production line and the ambient temperature in the workplace.

● Synchronous reluctance motor

Fans and water pumps are energy-intensive facilities. The synchronous reluctance motors feature energy saving, high efficiency, small size, light weight, and are easy to use with no demagnetization attribute. By retrofitting air handling units and chilled water pumps with synchronous reluctance motors, we achieved energy savings of 8%. With the support of internal carbon fees, plants in China have renovated a total of 420 air conditioning cabinets, 369 fans and water pumps, effectively reducing energy consumption and saving an average of 4.255 million kWh of electricity per year.

● EC fan

Delta's high-efficiency electronically commutated (EC) fan contains a brushless DC motor, which can drive the blades without a coupling, and reduce mechanical losses and power usage. After prototype testing, under the same air volume, the EC fan can reduce electricity consumption by 33% at 80% load. With the support of internal carbon fees, plants in China have replaced a total of 120 traditional fans with EC fans, saving an average of 648,000 kWh of electricity per year.

● Lighting

Part of Delta's production plants, dormitories, and office buildings originally installed a large number of 18W LED lamps. With the support of internal carbon fees, we replaced 152,000 18W LED lamps with our 11W LED lamps, which feature the same brightness but have lower power and higher efficiency. This saves an average of 6.588 million kWh of electricity per year.

EV100 advancement

Delta joined the EV100 initiative in 2018, becoming the world's first EV100 member that can provide energy infrastructure for electric vehicles. Delta is committed to providing charging facilities at Delta's operations and production plants within the scope of its global energy management, as well as to converting company vehicles to electric vehicles such as battery electric vehicles and hydrogen vehicles before 2030. This will reduce transport-related carbon emissions and facilitate the transition to low-carbon transportation. From 2021 to 2024, Delta compiled a global internal carbon price budget of approximately US\$2.7 million to support the installation of 96 EV chargers and the replacement of 19 internal combustion engine (ICE) commercial vehicles with electric vehicles, two diesel trucks with pure electric trucks, and six ICE forklifts with electric ones.

**UL2799 Implementation**

To manage waste, Delta has adopted UL2799 Zero Waste to Landfill validation in the plants of Wujiang and Dongguan since 2019. Under the support of internal carbon fees, there are 18 plants obtaining UL2799 certification. In 2023, Delta implemented a total of 16 waste reduction projects at global operations with internal carbon fees, including recycling of packaging materials, adjustments of parameters to reduce the use of solvents, and sludge moisture content reduction. The total amount of waste generated in the value chain activities of Delta's global operation sites totaled 66,626 metric tons. The total amount of all waste converted was 65,960 metric tons and the diversion rate was 99%. The total amount of waste also decreased by 3.5% compared with the previous year.

3.3 Internal impact

Finance Division

Internal carbon pricing is a new concept for the finance division. At Delta, the internal carbon pricing mechanism is combined with management reports and the performance of business units. Therefore, the biggest challenge for the financial division is how to create a reasonable integration, including carbon fee collection, and incorporate the concept of expenditures into management mechanisms and reports. After continuous discussions and attempts of various measures, the integration was finally and successfully completed. This has become a unique feature of Delta's internal carbon pricing mechanism being successfully and globally implemented.

Energy Management Service Department

Under the promotion of the internal carbon pricing mechanism, Delta's units around the world are quite enthusiastic at submitting proposals, a number of which reach as many as hundreds every year. During the project review process, we continuously optimize the review system, the communication principles, and the specifications of supporting materials to significantly improve the quality and compliance of proposals from various regions. We further recognize that carbon reduction awareness has been gradually mature in colleagues' minds. We find that when identifying energy-saving opportunities in various regions, the introduction of the internal carbon pricing mechanism functions as the financial resources available to each unit, and can effectively incentivize and drive each region to take specific actions.

Business Units/Plants

Delta's internal carbon pricing mechanism is incorporated into the management system and performance of business units. It is therefore valued by employees. Since its implementation, we have already witnessed that it accelerates the development of renewable energy and energy saving projects. Take energy saving in the plants for an example: We have our existing energy saving targets and regular performance review. As long as our proposals meet the utilization regulation of internal carbon fee, we are more confident to propose more improvement actions, plan the budget in advance, or implement more carbon reduction projects through asking for additional budget. Different plants and units will also make the comparison and learn from each other in terms of carbon reduction practices. Through this way we popularize best practices in different plants, further enhancing the awareness of carbon reduction. In the wave of recent changes in market and customer demands, we have also proactively incorporated low carbon and circular economy into products and solutions development. A reduction in energy consumption of production lines, and an increased use of renewable electricity, are observable changes after the introduction of an internal carbon fee mechanism in recent years.

A vibrant, futuristic cityscape featuring several tall, modern skyscrapers. The buildings are primarily composed of glass and steel, with some sections covered in lush green vegetation, suggesting a 'vertical forest' or 'green building' concept. The sky is a deep blue with scattered white clouds. In the foreground, there are rows of green trees and a clear blue path or plaza. The overall atmosphere is clean, modern, and environmentally conscious.

4

Future Prospects

Future Prospects

Since the launch of Delta's internal carbon pricing mechanism, it has helped Delta align with international carbon reduction trends, effectively reach phased carbon reduction targets, and accelerate the pace of decarbonization. We hope to share Delta's management experience through this report to encourage global partners to use internal carbon pricing as a carbon management tool and integrate it with the company's core development strategy and carbon reduction goals. It can drive internal behavioral changes to respond to the future climate in advance and increase climate resilience.

As net-zero sustainability has become a common goal for the world, we know that innovation and integration are necessary conditions for the sustainable development of companies in a rapidly changing environment. While Delta continues to strengthen its external core competitiveness, it also improves its climate strategy, clarifies carbon reduction targets, and implements carbon management to protect the earth and the environment. We will continue to adopt advanced approaches of the internal carbon fee mechanism and expand the current scope of carbon fee collection from Scope 1 and 2 emissions to Scope 3 emissions.

As the world needs technological innovation and breakthroughs to jointly move towards net-zero emissions, we will also use this mechanism to focus on forward-looking technological research and development, encourage the development of more innovative low-carbon applications, products, and solutions, expand green business opportunities, and actively integrate internal management mechanisms. We shall use more flexible and fair mechanisms and management methods to help Delta continue our steady progress towards net zero and work with global partners to jointly move towards the climate goal of limiting global warming to 1.5°C.

