



Major Environmental Policies

Ministry Of Environment, R. O. C (Taiwan)

<https://www.moenv.gov.tw/>



General Policy

New Minister Takes Office and Announces Four Key Directions

For the first time, Dr. Peng Chi-Ming, the newly inaugurated Minister of Environment, met with the media on 21 May 2024 to speak about his vision of environmental protection. He discussed four topics: “improving environmental impact assessment reviews”; “accelerating the collection of carbon fees”; “improving air quality”; and “making the minister’s daily schedule public”. Meanwhile he emphasized that 60% of his energy will be placed on getting the net-zero path on track. He mentioned that he has a fairly good idea of 70-80% of the ministry’s affairs and is ready to work with everyone in the Ministry of Environment (MOENV).

(1) Carbon fees are an incentive for CO2 reduction instead of a financial tool

Minister Peng pointed out that President Lai Ching-Te clearly emphasized that his “green growth strategy” means Taiwan aims to undergo green economic growth, supported by carbon pricing in order to develop a net-zero path, and to point the direction for industrial development. The green growth strategy comprises “green finance,” “net-zero technology,” “green and digital transition in parallel,” “green medical care,” “energy transformation” and “increase of carbon sinks.” Minister Peng stressed that these policies require cross-departmental cooperation. There will be many “two minister” policy announcements, in order to demonstrate that the net-zero transition

for the climate is not only to keep an eye on environmental protection, but also to uphold both corporate fairness and social inclusion. That is what sustainability really means.

“I am the chief sustainability officer of the Central Government, and the CSO of every company is their own Minister of Environment,” said Minister Peng, who sees his role in the government from the industrial point of view.

(2) Acceleration of legislation

“I have been asked about when carbon fee collection will start,” Minister Peng added, feeling pressure from all sectors of society. In order to develop Taiwan’s own carbon pricing system and steadily push CO2 reduction forward, on 29 April 2024 the Ministry of

Environment (MOENV) preannounced the drafts of “Regulations Governing the Collection of Carbon Fees,” “Designated Greenhouse Gas Reduction Goal for Entities Subject to Carbon Fees” and “Regulations for Administration of Voluntary Reduction Plans” based on the Climate Change Response Act (hereinafter the Climate Act). A 60-day preannouncement period is required to allow for collection of public opinion, and presentations are provided to stakeholders during this period. At the end of the 60 days, a negotiation meeting will be held. It is expected that these sub-laws will be promulgated by the end of August, allowing the entities subject to carbon fees to start working on their CO2 reduction measures and their reduction path to 2023, and to propose their own voluntary reduction plans so as to become eligible for preferred rates. The purpose is to clearly encourage entities subject to carbon fees to make larger steps toward CO2 reduction.

Dr. Wen-Chen Shih, Deputy Minister and convenor of the carbon fee review committee, explained that the MOENV is working tirelessly on evaluating the impacts of carbon fee rate schemes on the economy in general. The fourth review committee meeting is scheduled for 5 July.

The first thing that the new minister must deal with is the challenge of carbon fee collection. Minister Peng indicated that Taiwan uses carbon fees as a stick for promoting CO2 reduction, while there is no carrot. The experiences of other countries, however, have shown that it does not work well with only the stick. It is necessary to find a new way to get the job done. Two examples worth studying are the tax reduction scheme in the US and the climate bonds in Japan. It is necessary to make the stick and carrot work together optimally,

while identifying and launching the carrot policies appropriate to Taiwan, i.e., leading the actual actions of CO2 reduction with well-developed policies.

Minister Peng pointed out that there are indeed green opportunities to be had when we look at the experiences of many Taiwan-based international corporations, such as Delta Electronics, AUO and TSMC, as they have taken initiatives that lead global trends and developed their own unique competitiveness. However, the story could be different for corporations that are high in CO2 emissions and struggling with issues of importing and exporting. Minister Peng called out to corporations to stay calm. Opportunities are out there as long as they are worked for. The MOENV will take the needs of different industries into consideration, and communicate sufficiently to take advantage of industrial transformation and upgrading.

As for the progress of carbon fees around the world that everybody is concerned about, such as the EU’s carbon border adjustment mechanism (CBAM), the MOENV has people in the US and Europe keeping track of developments, with support provided from the Executive Yuan and Ministry of Foreign Affairs.

(3) Review of Air Quality Standards to stay in line with WHO

“We will try to squeeze something out of nothing for progress, like squeezing a towel.” When asked about air quality becoming worse after the COVID pandemic than before it, Minister Peng stressed that the improvement of air quality for public health is one of the MOENV’s core duties, which it has been working on since 2016. The latest statistics show an improved

trend in air quality throughout Taiwan. For fine particulate matter pollution (PM_{2.5}), for example, the national average has dropped from 20 µg/m³ in 2016 to 13.7 µg/m³ in 2023, for an improvement rate of 32%. This met the air quality target of 15 µg/m³ for PM_{2.5}. To continue to improve air quality, the MOENV proposed and submitted the Stage 2 Air Pollution Control Solution to the Executive Yuan for approval, and on 29 April 2024 amendments to the Air Quality Standards were preannounced, with tighter standards. The amendments will be integrated with the eight aspects and 37 reduction strategies of the Stage 2 Air Pollution Control Solution to keep a practical and steady pace toward improvement of air quality.

The MOENV stressed that significant temporal and spatial variations in pollution spread exist in Taiwan due to multiple factors, such as migration of air pollutants from beyond our borders, pollution caused by ships at sea, the unique physical geography of Taiwan and seasonal changes in atmospheric diffusion. Taiwan is an island where the majority of the population is concentrated in small areas. Most of the pollution sources are located in southern and central Taiwan where the conditions for diffusion are poor. These are just some of the challenges to deal with regarding air quality improvement. With the preannouncement on 29 April 2024 of the tightened amendments to the Air Quality Standards, comments asking for far tighter Air Quality Standards have been received from all corners of society. In response, Minister Peng pointed out that the MOENV has been working on how to achieve the air quality targets established by the WHO in stages, while taking all influencing factors into thorough consideration for further amendments.

(4)MOENV continues with EIA review improvement – rapid test kit for offshore wind power

Regarding EIAs for offshore wind power, there has been the issue of overlapping wind farms in the Stage 3 offshore wind power environmental impact assessments (EIAs), where multiple developers are fighting for the same wind farm site using their own EIA versions. This leads to different developers working on environmental surveys repeatedly, but only one single developer will be ultimately awarded the approved capacity to be developed, which is a waste of administrative resources. Seeing this, the MOENV started talking to the Ministry of Economic Affairs (MOEA) at the beginning of 2024 and came up with a new mechanism of review consisting of two stages, with a checklist included for a higher standard of environmental protection and monitoring. For the stage 1 review, the MOENV will examine the submitted documentation against the checklist. Those who comply with the requirements will be offered an approval letter from the MOENV for passing the stage 1 review and become eligible for the selection by the MOEA. Once the approved capacity is awarded, the review package will be submitted to the MOENV for stage 2 comprehensive review. Thus, there will only be one developer that becomes eligible for the comprehensive review, a giant leap for process simplification. It will be like a rapid test kit that takes care of both green energy development and environmental protection, a win-win for developers, environmental groups and government agencies.

(5)The MOENV is considering adding more experts to the Fourth LNG terminal review to seek a consensus

The Fourth LNG terminal is a great concern as the new minister takes office. The MOENV indicated that Taipower has requested an extension of the review to 31 July 2024. On whether there is a deadline imposed by the MOEA for the LNG terminal review and whether Taipower's plan is involved, Minister Peng stressed that the MOENV does things at its own pace, since "the Ministry of Environment is not the Department of Environmental Protection of the Ministry of Economic Affairs."

For other issues of public concern, such as "marine ecology," "ship maneuvering safety" and "port operations," the MOENV is planning to invite an expert from each of the abovementioned fields from the MOEA, developers or NGOs, for a total of six review experts on the review panel conducting professional investigations on environmental issues, who are to find a consensus. In addition, regarding public participation, citizens and groups for and against the proposition may sign up for the review meeting as observers, and present their comments in the meeting for consideration by review experts, and speak for their own rightful interests while giving an idea of the number of people they represent. The MOENV expressed that it will take all of us working together to tackle climate change, energy transition and environmental challenges to come. The MOENV keeps an open mind for what the public has to say, both positive and negative.

(6) The MOENV is expected to preannounce the Standards for Solar Power Developments Subject to EIA in June 2024 for the review and correction of environmentally sensitive locations and size of establishment.

The MOENV says the EIA standards for solar power development are being examined for areas needing amendments, seeing that solar power systems located at "specific sensitive locations" or "established in large size" have caused quite a stir in society in general. In addition to those proposed at important wetlands that require EIAs, it is considered that those proposed in a sensitive area like a national park or wildlife refuge and those located on a slope of a certain size (in terms of area or installed capacity) shall be subject to an EIA as well. The MOENV held a meeting with the ministries involved and local environmental protection bureaus on 10 May 2024 and reached a preliminary common ground, and it is expected to preannounce draft amendments by the end of June and promulgate them by the end of December.

Minister Peng pointed out that the MOENV will start a review of the existing EIA review system in the second half of 2024, aiming to complete it in 6 to 12 months. Having said that, the Minister also clarified that most EIA reviews, or more than 90% to be exact, can be done in under a year at present, except certain highly disputed cases.

(7) Open government in real life – making the minister's daily schedule public

Being the former head of Open Data for Taiwan, Minister Peng made it clear that he takes the idea of open government very seriously, and suggested that the government should make its information publicly available in an open data format for public access and value-added creativity. He foresees that there will be a lot more to do for the open government, starting from the MOENV. For this, not only his official schedule and those of his deputies will be

revealed on the MOENV's website a day ahead, but also the summary of every meeting and visit will be published for public viewing as a response to the public demand for open government.



■ Dr. Chi-Ming Peng, new Minister of Environment, in his first meeting with the media



■ Minister Chi-Ming Peng outlines the future policy vision of the Ministry of Environment

5月
113年21日
週二部
長**下午 02:00 彭啓明部長與記者有約 - 談環境部業務展望**

地點：環境部4樓405會議室

地址：臺北市中華路一段83號

備註：1. 彭部長與媒體記者說明對環境部業務推動之理念及展望。
2. 本次記者會由施文真次長陪同。

新部長上任揭示四大重點政策

環境部新部長彭啓明21日首次與媒體見面談環境業務展望，提出「精進環評審查」、「加速碳費徵收」、「務實改善空品」與「公開首長行程」四大主張，更強調60%的精力將用在讓淨零路徑盡快上軌道，而其他的業務也已掌握7、8成，將與環境部同仁共同努力。[\(詳全文\)](#)



■ Minister Chi-Ming Peng outlines the future policy vision of the Ministry of Environment

General Policy

The Green Policy Office Just Established to Integrate Net Zero Transition Efforts

The Ministry of Environment (MOENV) established the “Green Policy Office” as a task force on 20 June 2024, taking charge of integrating and coordinating the MOENV and subordinate agencies for the policy development and implementation in terms of climate change and net zero transition, while the MOENV is working together with all ministries involved for net zero and green growth actions and review on how to improve the government’s efforts in climate governance.

Dr. Peng Chih-Ming, Minister of Environment, indicates that the Office is led by both deputy ministers, and the Director General of Climate Change Administration is appointed as the CEO overseeing the dispatching of workers across the MOENV and subordinate agencies who are familiar with this aspect to work under the Office. Dr. Peng stresses that cross-department cooperation is vital for many net-zero policies, including green and

digital transitions in parallel, green finance, promotion of green medical care, net-zero technology applications, green leader training, and citizens’ climate literacy. In addition, it is necessary to strengthen cooperation between government and private sector for low-carbon transformation, continue to stay on top of international development trends, learn from other countries for successful implementation experiences, introduce innovative policy

tools in a timely manner, and increase efforts to accelerate carbon reduction.

Dr. Peng mentions that we still have a long way to go for substantial CO₂ reduction and the path to net zero. Positive efforts are needed. For this, the MOENV will provide full support for the National Council for Climate Change Strategies (國家氣候變遷對策委員會) under the Office of the President in terms of building a complete organization from the bottom up like building a better house for more efficient implementation of net zero. In response to the public concerns for the environmental impact assessment of the 4th LNG Terminal at Hsieh-ho Power Plant, Dr. Peng says that the National Council for Climate Change Strategies is established for discussion on future energy policies, and he hopes to do more on communicating with the public. For the implementation side, on the other, it all comes to professional review, and he does foresee any pressure or influence on the EIAs.

Again, Dr. Peng stresses that his experiences in the private sector tell him that the sustainable department cannot not do the job alone when a company is going for net zero. It takes the entire organization to work as a team. As such, he will play the role of CSO for the Premier and work together with all ministries to deepen the concepts of sustainability and invest practical efforts in the implementation, hopefully better matching the administrative concept of President Lai for "Green Growth Policy." voluntary reduction plan will be cancelled in accordance with regulations if an enterprise is found by the central competent authorities failing to implement the plan accordingly, and the difference in payment between the general rate and the preferential rate for the current year will be recovered.

Finally, the MOENV sets the ratio of reduction credits from charged emissions at 1.2 for entities subject to carbon fees who

use the voluntary reduction projects and offset projects, provided that the deduction limit for using reduction credits shall not exceed 10% of the enterprise's charged emissions. This is to encourage entities subject to carbon fees (major emission sources) to lead those not subject to carbon fees for emission reduction and keep their funds in Taiwan as a priority. Also, the ratio of reduction credits from charged emissions at is set at 0.3 for enterprises not of high carbon leakage risks which started the pilot reduction projects two years before the collection of carbon fees, as recognize their early reduction efforts. In addition, enterprises not of high carbon leakage risks are eligible to use the foreign reduction credits approved by the central competent authorities as an additional supporting package, provided that the upper reduction limit does not exceed 5% of the charged emissions.

The MOENV pointed out that the carbon fee collection system is designed with reduction in mind, rather than an additional source of government incomes. It is hoped that the economic incentives of carbon fee collection will accelerate the carbon reduction of Taiwan's industries and facilitate the low-carbon transition.



■ Minister Chi-Ming Peng, gives his speech at the opening ceremony of Green Policy Office



■ Minister Chi-Ming Peng and MOENV officials unveil the Green Policy Office plaque



■ The Green Policy Office will be in charge of integrating all efforts for net zero transition

Climate Change

Carbon Fee Collection to Be Based on International Practices Focused on Transition

There is concern among NGOs as to when collection of carbon fees will start and how they will be collected. The Ministry of Environment (MOENV) stressed once again that the acceleration of carbon fee collection has been a priority of

the ministry. The MOENV is studying the carbon pricing experiences of the EU, Singapore and South Korea in order to develop multiple tools for the carbon fee system, under the existing legislative framework for diversified CO₂ reduction. The MOENV emphasized that the purpose of collecting carbon fees is to accelerate CO₂ reduction and encourage industrial transformation, rather than to increase government revenues. The industrial sector was requested to formulate feasible carbon reduction plans as the MOENV developed the related fee system package. Companies will be awarded preferred rates only if governmental supervision is implemented every year. The following have been added by the MOENV:

(1) Specific reduction objectives are being mapped out according to the 2030 CO₂ reduction path.

The MOENV currently has two specific reduction objectives for industry in general: one is to reduce emissions by 42% according to science-based targets by the target year of 2030, with 2021 as the base year; the other, based on technical benchmarks, is to reach specific reduction rates using the 5-year average emissions from 2019 through 2023 as the baseline rate of emissions. Provided that the nationally determined contribution is achieved in 2030, the emission benchmark values are established for different types of emissions, such as direct and indirect emissions from the use of purchased electric power.

For example, for fixed fuel combustion, the benchmark value is defined as the heating value of the top 25% of fuel-burning industries in Taiwan (such as steelmaking, cement manufacturing, the petrochemical industry, the textile industry, papermaking and others) to be used for calculating the emissions to be reduced by 2030. Once carbon fee collection starts, with voluntary reduction plans and specific targets already in place, the MOENV estimates that up to 24% (compared to the baseline defined by the 5-year average from 2019-2023) of emission reductions can be achieved from entities subject to carbon fees, assuming that all entities subject to carbon fees have proposed their voluntary reduction plans and have achieved the technical

benchmark-based reduction rates. The total of these reductions is expected to help Taiwan reach the nationally determined contributions to emission reductions by 2030.

(2) Accelerate industrial low-carbon transition with reduction as the starting point

The MOENV indicated that the experiences from jurisdictions where a carbon pricing system is in place, such as the EU, South Korea or Singapore, have shown that free emission credits or tax exemptions are often awarded to prevent carbon leakage and encourage industrial transformation. In comparison, the preannounced draft of Taiwan's Regulations Governing the Collection of Carbon Fees is designed to be stricter.

In the EU, for example, 100% of emission credits are awarded unconditionally for industries on a watch list for being high carbon leakage risks, yet meet the respective emission benchmarks. However, in Taiwan, the entities subject to carbon fees are required to propose a voluntary reduction plan with specific targets for approval before the deemed quantity of emissions are adjusted, considering applicable carbon leakage risk factors. With this mechanism, those subject to carbon fees still have to pay a certain percentage

of carbon fees and are obligated to pay them even though they are eligible for the emission adjustment mechanism mentioned above. The chargeable emission quantity in Taiwan is developed based on the emission adjustment schedule in steps of 0.2, 0.4 and 0.6, and this is in turn based on the phasing-out schedules for free credits internationally. In other words, contrary to rumors, Taiwan's carbon fee system will not provide large discounts for entities with high carbon leakage risks. The system is designed on the basis of emission reduction. There will be no stripping of authority from the carbon fee review committee, as has been speculated.

(3) Appropriate use of reduction credits to encourage diversified reduction in Taiwan

The MOENV pointed out that its priority is to encourage those not subject to carbon fees (small emission sources) to reduce CO₂ in order to maximize reduction results in Taiwan. Thus, if those subject to carbon fees use voluntary reduction credits or carbon offsets to reduce their emissions, they will be credited for 1.2 times the carbon reductions (in other words, they will be granted an extra 20% reduction credit if they use voluntary reduction credits or carbon offsets). However, the upper limit of deductions for the use of reduction credits shall not exceed 10% of the discharged emissions. In addition, a limit is imposed on the use of foreign reduction credits by those who are subject to carbon fees, but are not of high carbon leakage risk. In these cases, for the deduction of charged emissions, the upper limit is set at 5%. The standards for recognition of the source and quality of foreign reduction credits will be established based on the requirements of

the Paris Agreement.

(4) Track and audit voluntary reduction plans every year

The MOENV stressed that it is planning to audit the progress of voluntary reduction plans every year, and keep track of how plans are implemented by those subjects to carbon fees and those who propose voluntary reduction plans. Enterprises are required to submit to the MOENV the progress report for their voluntary reduction plan for the previous year by 30 April of every year. Those who meet the progress targets are eligible for preferred rates for the current year. If any enterprise is found not implementing the plan as required by the central competent authority, the difference between the regular and preferred rates will be collected and improvements required by the given deadline. For those who fail to improve by the deadline, their approved plans will be cancelled. In this case, the enterprise will have to pay for the carbon fees at the regular rate and no longer be eligible for the carbon leakage risk factor due to failure to have its voluntary reduction plan approved.

The MOENV preannounced the drafts of three sub-laws of carbon fee collection on 29 April 2024. All suggestions or comments are welcome. The MOENV and Ministry of Economic Affairs have made three presentations explaining the three sub-laws of carbon fee collection to those subject to carbon fees, and will invite NGOs concerned about the carbon fee collection system for further presentations of carbon fee sub-laws for more comments and suggestions regarding these sub-laws.

Climate Change

Post-COVID GHG Emissions Dropping in Taiwan in Contrast to Global Trend

To align with the most recent international specifications, the Ministry of Environment (MOENV) worked with relevant departments to develop the “National Greenhouse Gas Emission Inventory (2004)” (hereinafter the GHG emission inventory) according to Article 13 of the Climate Change Response Act. The inventory was published on the “Open Climate Information Platform” on 25 June 2024. It shows that Taiwan’s 2022 GHG emissions were 285.97 million tons of carbon dioxide equivalent (MtCO₂e). After deducting 21.83 MtCO₂e to account for carbon sinks, the net GHG emission was 264.13 MtCO₂e, a decrease of 4.07% compared to 2032 and 1.77% compared to the base year of 2005. The inventory data reflects that Taiwan has been doing its part in energy transformation and GHG reduction in every department. Taiwan has gone a long way regarding GHG reduction, in contrast to increased post-COVID GHG emissions around the world.

The following are the key points of this GHG emission inventory:

(1) Attachment 1 of the United Nations Framework Convention on Climate Change (UNFCCC) asks all members to submit a national inventory report (NIR) every year for the previous two years. Although not a UNFCCC member, Taiwan has produced its own NIR every year, adhering to the IPCC Guidelines for National Greenhouse Gas Inventories. This year, Taiwan decided to follow the resolution of UNFCCC COP27 and adopted the global warming potential (GWP) values in the 5th IPCC assessment report for the inventory.

(2) Taiwan’s historic record of total GHG emissions shows that its emissions peaked in 2007 then started a decline to 2020. Despite the increase in 2021 as the economy revived after the COVID pandemic and as power consumption increased, the emissions took a downturn again in 2022. As for CO₂ emission intensity, in 2022 it was 0.01191

kgCO₂/NTD in 2022, a decrease of 5.62% compared to 2021.

(3) The complete report and executive summary of the “National Greenhouse Gas Emission Inventory (2004)” are available for download at the “Open Climate Information Platform”.

Post-COVID GHG emissions reached a high in 2022 globally, while emissions decreased in Taiwan.

The Emissions Database for Global Atmospheric Research, EDGAR, operated by the Joint Research Centre (JRC) of the European Commission, released the “GHG Emissions of All World Countries” report, indicating that global GHG emissions reached a record high of 53.8 GtCO₂e in 2022, a 1.37% increase as opposed to 2021. In addition, the “CO₂ Emissions in 2023” published by the International Energy Agency (IEA) indicated a 1.3% increase in global energy-related GHG emissions in 2022 compared to 2021, suggesting a constant increase of GHG emissions as

the economy came back to life in the post-COVID era. In comparison, Taiwan has shown a decrease in 2022 in both the total GHG emissions (3.78% less than in 2021) and energy-related emissions (3.39% less than in 2021), indicating that Taiwan has not aligned with the general worldwide trend of rising GHG emissions during the post-COVID economic rebound.

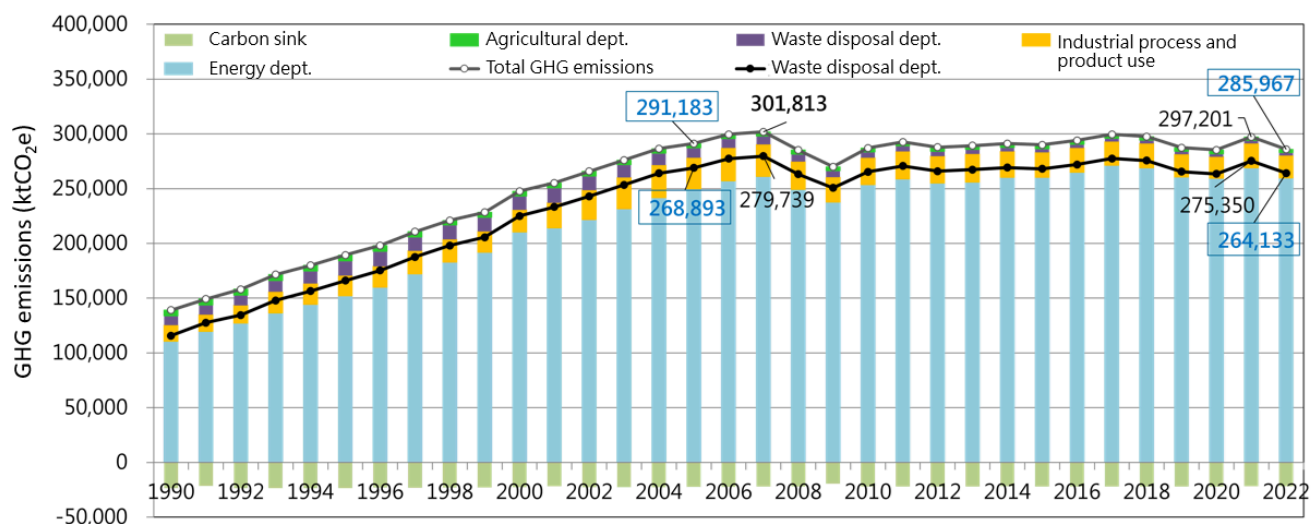
Taiwan's GHG emissions and economic growth showed a decoupling trend in 2022, placing Taiwan among the best-performing countries in the world.

In contrast to advanced countries, Taiwan displayed 2.60% economic growth in 2022 compared to 2021, a clear sign that GHG emissions and economic growth are decoupling. This suggests that Taiwan has produced outstanding results in promoting green growth and transition to low-carbon. It has been particularly remarkable that it maintained a downward slide for GHG emissions while keeping the economy growing, putting Taiwan among countries of significant performance in this regard.

transition by 2050, Taiwan still has to pick up the pace for CO2 reduction.

The MOENV points out that it has been busy taking climate action in terms of legislation, systems and policy. With the promulgation of the Climate Change Response Act in 2023, all relevant ministries and agencies are getting involved in the 2050 net-zero path and the 12 key strategic action plans. In August 2023, the National Council for Sustainable Development revealed the annual goals for six major departments regarding improvement of the GHG management and auditing system, including an annual achievement report. In his inauguration speech on 20 May 2024, President William Lai said that his “National Hope Engineering” incorporates the five strategies for 2050 net-zero transition. The MOENV is positively promoting a carbon pricing and market system, leading the industrial sector through transition to low-carbon, and examining progress towards established goals based on the emissions inventory, thus moving toward the ultimate goal of “net-zero transition, sustainable Taiwan”.

Facing the daunting task of net-zero



■ GHG emission trends in Taiwan

Ministry of Environment Wins a Smart 20 Award for Innovative Application of Air Quality Sensing Technology

The Ministry of Environment (MOENV) has been working on the IoT (Internet of Things) for environmental sensing. For air quality, efforts range from the establishment of approximately 10,000 air quality sensors around the country to the innovation of mobile air quality sensors and systems. This year, the MOENV entered the 2024 Smart 20 Awards held by Smart Cities Connect on the topic of “Advanced Air Quality Monitoring□Innovations and Applications of Mobile Air Quality Sensors”, and won the Smart 20 Awards from among more than 700 international competitors in the category “smart city application service”. This award is not only a recognition of what the MOENV has been doing regarding innovative applications for air quality monitoring and intelligent governance, but also a demonstration of what Taiwan has done as a leader in promoting smart cities.

The MOENV points out that it has been working hard to introduce advanced technologies such as sensors, IoT and AI big data since 2017. It has been working with 18 local governments on establishing nearly 10,000 air quality sensors as part of an IoT air quality monitoring system that gathers real-time information high in temporal and spatial resolution. This will help local governments with their pollution inspections, and expand cross-field applications for smart environmental governance.

To further improve the range and mobility of air quality sensors, the MOENV started working with the Green Energy and Environment Institute of the Industrial Technology Research Institute (ITRI) in 2020 on the development of mobile air quality sensor devices and systems for the continuous optimization of mechanism designs and dynamic calibration techniques. Tests and verifications have been performed in multiple fields to improve sensor data accuracy and expand the

scope of application.

This award was presented for the introduction of mobile air quality sensors, that not only helps detect and report potential pollution sources to be investigated, but also can be used to assist with tasks such as traffic control, monitoring sudden pollution plumes, and the management of air quality maintenance zones. It provides powerful technical support for air quality improvement in this constantly evolving intelligent environmental governance application. As an application for environmental governance, the mobile sensors have been deployed in Taipei City, New Taipei City, Taichung City, Tainan City, Kaohsiung City, Nantou County, Chiayi County and Hsinchu City.

The MOENV explained that the Smart Cities Connect has been organizing the Smart 50 Awards every year since 2017, recognizing 50 innovative and influential smart city application services. All parties, whether private businesses or government agencies, are eligible for the awards. This

year (2024), saw the first Smart 20 Awards, where only the best smart city applications were selected. This award recognizes what the MOENV has done for innovative applications in the area of air quality monitoring and smart governance.

The MOENV was the first central agency in Taiwan to win this honor and was invited

to Raleigh, North Carolina on 7 May 2024 for the award presentation. Deputy Director General Hu Ming-Hui of the Department of Monitoring and Information accepted the award on behalf of the MOENV and had friendly interactions with global experts and smart city leaders to discuss what Taiwan has learned from and done for promoting smart cities.



■ Deputy Director General Hu Ming-Hui of Department of Monitoring and Information with Mrs. Chelsea Collier, Editor at Large Managing-Partner



■ Mobile sensor (MOT) used for monitoring the plume of pollution caused by a fire

Climate Change

Regulations Announced for Trading, Auctions, and Transfers of Reduction Credit

The MOENV promulgated the Regulations Governing Trading, Auctions, and Transfer of Greenhouse Gas Reduction Credits (溫室氣體減量額度交易拍賣及移轉管理辦法) according to Article 25 of the Climate Change Response Act (氣候變遷因應) so as to have more targets exposed to reduction incentives. Aiming to establish an open and transparent trading market in Taiwan for voluntary reduction, the promulgation encourages proactive reductions and has started a new page for carbon pricing in Taiwan.

The MOENV pointed out that the legislation aims toward open transparency in trading, auctions, cancellations after use of domestic reduction credits. Other purposes include allowing the public to easily review industries' specific reduction status, and avoiding speculations, operations involving other commercial interests, or trading disputes. The regulations specify requirements in various stages regarding reduction credits, such as holding, trading or auctions, completions of trading deals, cancellations after use. Effective on 15 August 2024, there are a total of 38 articles. Key points of the regulations are as follows:

(1)Government management against frauds

A trading platform will be set up by the MOENV-commissioned Taiwan Carbon Solution Exchange for enterprises to trade or auction reduction credits. Regular private entities are prohibited from providing platforms to conduct brokerage, consignment or trading of reduction credits. The centralized management of reduction credit trading market will help improve

trading security and prevent enterprises from scams.

(2)Open transparency against green-washing

Credit units are expressed in tons of CO₂e. Each unit is coded to provide identification information such as types of credit, types of projects and monitoring periods, ensuring the validity of credits during acquisitions, transfers after trading or auctions, and cancellations after use. Also, relevant trading and auction information are made public on the trading platform for public viewing and inquiries, thus effectively preventing green-washing. Such information include project names, reduction measures, quantity of reduction credits, credit codes and monitoring periods, trading prices, and the names of buyers and sellers.

(3)Diversity and flexibility

The regulations specify three trading methods, by fixed price, negotiations, and auctions. Enterprises can choose the most favorable trading method based on

the nature of its reduction credits, sales strategies, and profits. However, preliminary projects are reduction measures before the Climate Change Response Act was promulgated. The resulting credits can only be traded by negotiation, but trading or auction is not available at the Taiwan Carbon Solution Exchange. The goal is to ensure Taiwan's actual reduction results.

(4) Stability ensured for supply and demand

Sellers allowed for trading or auction are enterprises that have implemented their own offset projects, preliminary projects or voluntary reduction projects and have available reduction credits. Buyers are enterprises that meet one of the purposes specified in the Climate Change Response Act Article 26, such as carbon fee payments,

offsets for increased emissions in EIAs, or any other MOENV-approved purposes, and individual persons are not eligible buyers. Furthermore, once traded or auctioned, reduction credits will be transferred by the MOENV and transferred once ONLY to ensure market stability.

The MOENV indicated that carbon fee collection, which has received lots of attention lately, is the key to carbon pricing, and promotion of voluntary reduction trading system is an important assisting measure. The open and transparent trading market allows enterprises and governments to make their reduction credits available for others for carbon fee reductions, offsets and relevant environment statements. Establishment of the reduction credit trading market will help Taiwan implement the carbon pricing system and achieve the goal of net-zero transition.

Key Points of the Regulations Governing Trading, Auctions, and Transfers of Greenhouse Gas Reduction Credits



Designated trading platform

- ❑ The **MOENV-designated trading platform** allows enterprises to trade and auction reduction credits.
- ❑ Reduction credit trading is entrusted to the FSC or FSC-designated agencies: The FSC designated **Taiwan Carbon Solution Exchange** to conduct trading on 19 May 2023.



Participants

- ❑ **Sellers:** **Enterprises** that have implemented their own reduction projects, pilot reduction projects, or voluntary reduction projects and **have available reduction credits**
 - ❑ **Buyers:** **Enterprises that meet one of the purposes in the Climate Change Response Act Article 26**
 - Offsets for increased emissions in EIAs
 - Carbon fees deducted
 - Emission differences from **Taiwan's version of CBAM** deducted
 - Excess from **total emission control** offset
- ⊘ **Not eligible for individual persons**



Applicable targets

- ❑ Reduction credits from **preliminary projects**
 - ❑ Reduction credits from **offset projects**
 - ❑ Reduction credits from **voluntary reduction projects**
- [Not including foreign reduction credits]**
- ❑ Credit unit is expressed in **tons of CO₂e** and coded with information to identify its type, project type, and monitoring periods.



Trading methods

- ❑ By **fixed prices**
- ❑ By **negotiation**
- ❑ **Auction**
- ❑ Credits **can only be transferred once** after trading or auctions.

■ Key points of the Regulations Governing Trading, Auctions, and Transfers of Greenhouse Gas Reduction Credits

Ministry of Environment Publishes Amended Guide for Greenhouse Gas Verification to Ensure Quality of Verification Bodies

A number of mechanisms and requirements, such as carbon fee collection and intensified voluntary reduction, were established in response to the amendment of the Climate Change Response Act (hereinafter the Climate Act) on 15 February 2023. These are part of the foundation for the reduction of greenhouse gas (GHG) emissions in Taiwan, and the requirements in this regard are generally being tightened around the world. The latest amendments to the guide are intended to strengthen the requirements for independence and impartiality of verification bodies and their workers. A code of ethics has been added for verification bodies in addition to minor adjustments based on the changes in the inventory and verification sub-laws. The purpose is to guarantee the reliability and credibility of Taiwan's inventory and verification data as the basis of the nation's carbon pricing mechanism and the force driving progress toward the national goal of net-zero by 2050.

The guide was amended in three aspects: new requirements for impartiality and independence of GHG verification bodies; a code of ethics and relevant courses for these bodies, and; principles to follow for verification. These are described below.

(1) Improve the fairness and independence of GHG verification bodies

Verification bodies shall perform greenhouse gas verifications as a third party from a detached position. Thus, this amendment is focused specifically on the code of practice for impartiality and independence. It has been added that a verification body shall have no affiliation with the entity being verified; also, a verification body that is a non-profit corporation shall not verify its sponsor(s). In order to maintain the impartiality and independence of the verification body, personnel performing verification tasks shall not have nor develop close personal relationships with important

workers of the entity being verified, which produces greenhouse gases and data on production processes.

(2) Eliminate confusion around courses for GHG verification personnel

Some entities have misleadingly publicized that they offer programs leading to accepted qualifications as GHG verification specialists. To deal with this, a code of ethics has been added in Chapter 1 of the amendment stating that training programs provided by verification bodies must be designed to prepare trainees to become professional verification specialists, however they will not be permitted to publicize that trainees will become legal verification specialists after receiving a certificate for completing their training programs.

(3) Specify GHG verification procedures and improve GHG verification quality

This amendment to the guide is based on that of the “Regulations for Management of Inventory, Registration and Verification of Greenhouse Gases”. It defines the scope and parameters of verification, determines emission coefficients, examines heat values and sources of carbon, and adds key points to be covered in the verification report. Also added are principles for case splitting in ad hoc verification cases, and definitions for the size of micro and small voluntary reduction projects.

The MOENV pointed out that the amendments will take effect on 1 January 2025 to allow ample time for enterprises to prepare for the new regulations on GHG verification. These amendments to the guide aim to serve as a technical basis for verification bodies in their operations, helping them maintain and then improve the quality of verification, and gradually improve Taiwan’s GHG verification management system.



■ *Guide for Greenhouse Gas Emission Verification, amended and promulgated by the Ministry of Environment*

Waste Management

Amended Permit Management Regulations Announced Concerning Waste Clearance and Disposal Organizations

The MOENV promulgated the amended Permit Management Regulations for Public or Private Waste Clearance and Disposal Organizations (公民营廢棄物清除處理機構許可管理辦法) on 17 May 2024. The aim is to strengthen the integrity of the review process of waste clearance and disposal organizations, stipulate the principles of permit issuance and, in lines with the efforts of integrating environmental permits, enhance the coherence between tracking of pollution flows and registration contents of various environmental permits (documents). Three articles have been amended this time and become in effect on the day of promulgation. The key amendments are listed as follows.

(1) Specific principles of permit review

While the issuing authority receives applications, submissions, modification or extensions of clearance permits, establishment approval documents, trial operations, or disposal permits, the scope of review shall not cover matters other than the said applications, submissions, modifications, or extensions. No obligation not specified in any regulation shall be added in any form of penalties. Any obvious mistakes, such as incorrect writings or calculations, on the part of the issuing authority shall be corrected.

(2) Integration with environmental permits

Prior to applications of issuance, modification, or extension of disposal permits and clearance permits for establishment of a storage site or transfer station, applicants shall prepare charts indicating the pollution flows regarding air, water, wastes, and toxic and concerned chemical substances. If such process involves applications, modifications, or extensions of other types of environmental permits, they are to be filed simultaneously. However, this does not apply to those that

can prove lack of substantial involvement. The issuing authority may continue the review process if applications, modifications, or extensions are not filed simultaneously.

(3) Clear deadlines for permit issuance

The revision has added a clear deadline by which the issuing authority shall complete the permit approval process to prevent situations where a case remains open at the issuing authority due to the failure to issue or collect the said permit.

The MOENV indicates that this amendment provides more details regarding the issuing authority's permit reviews, which helps improve administrative efficiency and avoid delayed permit issuance. In addition, enterprises involving more than two types of permits are required to prepare charts of pollution flows before future permit applications, modifications, or extensions. They are also to submit simultaneously applications, modifications, changes, or extensions of other types of environmental permits if they are involved in the abovementioned process.

Air Quality**MOENV Tightens Fuel Regulations for Boilers Without Valid Installation Permit**

The regulations applicable to the three power plants operating on solid recovered fuel (SRF) in Taoyuan City caused quite a stir recently. The Ministry of Environment (MOENV) stated that these power plants are stationary pollution sources subject to the Air Pollution Control Act (hereinafter referred to as the APCA) that require

a permit to operate. The APCA specifies that the three SRF power plants need an installation permit from the Taoyuan City Government before establishing pollution sources. The MOENV pointed out that the "Emission Standards for Air Pollutants from Boilers" preannounced on 20 June 2024 were tightened in response to public concerns about emissions of dioxins and other pollutants. The "New Boiler" regulations apply to boilers that have not yet acquired an installation permit issued by the local government as required by law.

The MOENV explained that it is necessary for the competent environmental protection authorities to keep a track of how pollution sources operate and the characteristics of their pollution emissions. Article 24 of the APCA specifies that public and private premises possessing stationary pollution sources shall apply for permits for installation, operation and fuel use prior to installation or modification, and the facilities shall not start operating as permitted until they are approved in a test run, functional test or other review procedure to confirm the fuel use complies with applicable criteria and air pollution controls are in place at the facilities, for the ultimate purpose of pollution prevention. In order to avoid confusion in terms of applicability, the MOENV will add the purposes of the APCA to the applicable objects of the draft "Emission Standards for Air Pollutants from Boilers", making it clear that boilers that have not obtained an installation permit shall be identified as newly installed boilers.

In addition, combustible general industrial wastes in Taiwan go through screening, crushing and mixing to be turned into SRF based on development trends in advanced jurisdictions such as European countries and Japan, to be used as boiler fuel and reducing CO₂ emissions. Regarding past concerns about management and matters,

on 22 March 2024 the MOENV amended the "Technical Guidelines and Quality Specifications for the Manufacturing of Solid Recovered Fuels" (固體再生燃料製造技術指引與品質規範) strengthening the review system and management regulations. The "SRF Operation Checkup Consultation Group" was also established to diagnose problems and provide suggestions for improvements via factory visits, inspections and counseling. The checkup report will be ready in September 2024.


The MOENV will continue to review and integrate relevant regulations, propose SRF management measures within three months after the completion of the checkup report, and discuss better management through the use of digital tools. Subsequently, the MOENV will examine the dynamics and benefits of SRF operations, and expect to produce a white paper on SRF before the end of 2024. In the medium and long term, the MOENV will help the industry develop an alliance of its own, establish comprehensive self-regulatory mechanisms from manufacturing to use, build a good environment for conversion of wastes into SRF energy sources, reduce public concerns and maintain environmental quality.

MOENV explains

MOENV tightens SRF regulations

Boilers without installation permits are new pollution sources

- The draft amendment preannounced on 20 June tightens the criteria for pollutants such as dioxins. In the draft, the "new boiler" requirements apply to boilers that have not yet acquired an installation permit from a local government.
- Requirements will be reviewed and integrated continuously. The SRF management rules will be rolled out within three months after the SRF checkup report is produced, in order to build a good system for conversion of wastes into SRF energy.



■ MOENV tightens SRF regulations

Environmental Education

2024 World Environment Day Promotes “Less Plastics for Better Health”

Health starts from eating locally, in season, and with no plastics! Lining up with the 2024 World Environment Day theme of “Land restoration, desertification and drought resilience”, the Ministry of Environment (MOENV), joined by local environmental bureaus and residents, held an event on 1 June 2024 at the Peng-Shu Forest Park in Douliu, Yunlin County, entitled “2024 World Environment Day – Less Plastics for Better Health”. A series of interactive displays and games helped members of the public better understand the close relationship between land and food, and the impact of plastics on health. Taking care of one's own health and cherishing the earth's resources start with green living in daily life, and reducing plastics is a part of this. The event also encouraged everyone to work together towards 2050 net zero goals.

Promotional displays, games and hands-on demonstrations were arranged at the event to help members of the public learn in a lively and interactive way that choosing seasonal and local ingredients reduces the use of plastic packaging materials and reduces carbon emissions from transportation. There was a booth for borrowing environmentally friendly tableware, allowing the public to immediately experience how to reduce plastic and eat healthily. The local food ingredients were fresh, delicious and nutritious. The stage area featured a series of musical performances, picture books and musical story presentations, with the theme of "plastic reduction and food conservation". Short and interesting musical stories helped

adults and children understand that changes in every aspect of life can contribute to plastic reduction and food conservation. All are encouraged to change their habits and love the land and the planet.

Booths such as ones titled "The Plastics You Must Know" raised awareness of plastics, the environmental and ecological impacts caused by carelessly throwing away plastic wastes, how to take action to reduce plastics and environmentally friendly handmade products. There was also a "Reduce Plastics and Eat Local" market area, featuring Ministry of Environment booths promoting "Green Food", "Green Tourism", and "Reporting Public Nuisances". In addition, an anti-corruption booth was set



Publicity ceremony for 2024 World Environment Day – Less Plastics for Better Health

up to demonstrate government integrity to the public through interactive games, and to deepen the public's understanding of an honest and capable government through education and entertainment. Meanwhile, local environmental protection agencies from 19 counties/cities presented seasonal high-quality, environment-friendly produce from various places, including banana and fruit vinegar from Qishan, Kaohsiung City, organic fruit and small vegetable potted plants from Yunlin County, and NG beef jerky and NG Gong Tang candy from Kinmen County. "Dapu Community, Gukeng Township" in Yunlin County, which won the 3rd National Environmental Education Award Local Preliminary Excellence Category, and 111-year-old "Cuozei Community, Lin Nei

Township" in Yunlin County, which won the Green Cuisine Championship in 2022, were invited to demonstrate the use of seasonal, local, and premium ingredients to make dishes not only good for health, but that also reduce harm to the environment from plastic waste.

Prior to the activities that day, in early June 2024 the MOENV held the online sharing activity of "Plastic Reduction for Me", inviting the public to join the action of "Plastic Reduction for Me, whether you and I, how small a good deed is". All who love the earth are welcome to follow the "Ministry of Environment Facebook Fan Page" and reduce plastics for the sake of our common environment.



■ Minister Chi-Ming Peng, delivering a speech at 2024 World Environment Day – Less Plastics for Better Health



■ Minister Chi-Ming Peng visited the promotional booths



■ Minister Chi-Ming Peng and Dapu Community Development Association, Gukeng Township, Yunlin County promoted local seasonal produce

International Cooperation

Joint Taiwan-Sweden Chemical Substance Control Training Held

From 21 to 23 May 2024, the Ministry of Environment (MOENV) held the “Taiwan-Sweden chemical substance preventive control training – Action plan for a non-toxic everyday environment and PFAS management training program”. Three senior officers from the Swedish Chemicals Agency (KEMI) and a chemicals management specialist were invited to Taiwan to speak on topics such as the management of per- and polyfluoroalkyl substances (PFASs). Taking the issues of PFAS and chemical substance management very seriously, Dr. Chi-Ming Peng, Minister of Environment, gave a speech at the training venue in person, saying that he hoped this event will serve to improve exchanges between the two countries regarding chemical substance management, and that the MOENV would learn from Swedish PFAS management experiences to improve Taiwan’s PFAS management strategies.

The MOENV pointed out that this training was part of the “National Chemical Substance Management Board” event series and covered: the “Action plan for a non-toxic everyday environment, per- and polyfluoroalkyl substances (PFASs) management”; an introduction to the regulations under the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH Regulations) of the EU; experiences in implementing regulations on classification, labelling and packaging of substances and mixtures (CLP Regulations), and; an introduction to new hazard classifications.

The MOENV stated that Sweden has more than a decade of experience in promoting its Action Plan, a national level program dedicated to reducing the risks of hazardous chemical substances to human health and the environment. The plan’s central concept is that “the substances created or extracted by humans in the environment shall never threaten human health or biodiversity.” In

Taiwan, the same efforts are being exerted to promote the non-toxic action plan. Hopefully, these precious experiences will be learned directly from KEMI experts through this program and combined with Taiwan’s unique conditions for the continuous development of our own non-toxic action plan.

The MOENV pointed out that there are more than 10,000 PFAS substances as defined by the Organisation for Economic Cooperation and Development (OECD). As a cooperative effort under the Stockholm Convention on Persistent Organic Pollutants (the Stockholm Convention), Taiwan has included perfluorooctane sulfonate, lithium perfluorooctane sulfonate, perfluorooctane sulfonate fluoride, perfluorooctanoic acid and perfluorohexane sulfonate and their salts and related compounds in the Appendix A elimination list. These substances are now Class I toxic chemical substances with management regulations established for their uses. As one of the five

countries proposing the full-scale PFAS management legislation in EU, Sweden has years of experience in PFAS management. Hopefully, this event will help Taiwan improve its PFAS management system.

The MOENV pointed out that chemical substance labeling is an important part of preventive management. Proper labeling helps reduce the risks of using chemicals improperly. At this event, Swedish experts were invited to share their experiences in the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals, which in turn will help Taiwan stay in line with international chemicals management regulations.

Minister Peng gave his speech and expected that the training at this event would encourage interactions between KEMI and MOENV, help Taiwan develop its own PFAS management policy and national non-toxic action plan, and complete Taiwan's chemical substance management strategies and systems to align its chemicals management mechanisms with the world.



■ Minister Chi-Ming Peng, instructors and trainees at the training session