

# Major Environmental Policies

Oct 2023

## 1. Feature Article: Important Regulations Announced to Ready Taiwan for Carbon Pricing Era

The MOENV announced on 12 October the *Management Regulations for Voluntary Greenhouse Gas Reduction Projects* (溫室氣體自願減量專案管理辦法) and the *Management Regulations for Greenhouse Gas Emission Increase Offsets* (溫室氣體排放量增量抵換管理辦法). These are important subsidiary laws aimed at promoting emission reduction. The regulations for the trading of voluntary reduction credits and other subsidiary laws pertinent to carbon fee collection are being developed, readying Taiwan for the era of carbon pricing in 2024.

The *Climate Change Response Act* (氣候變遷因應法) was promulgated and came into effect on 15 February this year. It includes a range of diverse tools to promote effective carbon reduction, such as greenhouse gas inventory, inspection, carbon fee collection, voluntary reduction, and emission increase offsets. Following the recent amendments and publication of the three related subsidiary laws on inventory and inspection, regulations related to emission reduction were also put into effect in early October.

The MOENV stated that, in order to achieve the "net-zero carbon emissions by 2050" goal, carbon fee collection is the most crucial measure, with voluntary reduction and emission increase offsetting being two important complementary measures. During the climate act amendment process, consensus was reached among all sectors that carbon fees should be collected from major emitters, and this should be accompanied by specific targets and voluntary reduction plans to enhance and expedite their emission reductions. Meanwhile, a voluntary reduction mechanism is being promoted to encourage enterprises and government agencies at all levels to propose voluntary reduction projects and implement them. Upon implementation, these enterprises and agencies can obtain "reduction credits," commonly known as "carbon credits," which can be used by enterprises to offset carbon fees or be traded with those in need.

The *Management Regulations for Voluntary Greenhouse Gas Reduction Projects* (hereinafter referred to as Voluntary Reduction Regulations), is a regulatory framework that governs the application for domestic emission reduction credits. Its contents include how to establish voluntary emission reduction measures, verification methods and more, in accordance with the law. The formulation of this sub-law primarily referenced international trends in voluntary carbon market developments and adopted the "three-plus-five principles" (measurable, reportable, and verifiable; additional, conservative, permanent, avoiding environmental harm and avoiding double-counting situations). It also reviewed the past experiences of implementing the *Management Regulations for Greenhouse Gas Increase Offsets* in Taiwan to streamline procedures and enhance efficiency. The sub-law consists of a total of 23 articles.

Applicants should plan and implement emission reduction measures based on the reduction methods approved and published by the MOENV. They can choose from various types of measures, such as "removal" (e.g., afforestation, forest carbon sinks, marine carbon sinks, etc.) or "reduction or

avoidance of emissions" (e.g., energy efficiency improvements). The application process involves the registration and credits review stages, which require third-party confirmation and verification. For applications with reduction methods that are mature, involve easy and clear calculation, and have been implemented in Taiwan (e.g., replacement of lighting fixtures or water chillers), verification is exempt in the registration stage to reduce the burden on applicants. If there are no applicable reduction methods, new reduction methods can be applied for approval.

During the time when the *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法) was in effect, 93 emission offsetting projects had been approved, resulting in a total reduction of 24.37 million metric tons of carbon emissions via means such as energy efficiency enhancements, switches to low-carbon fuels, destruction and removal of fluorinated gases, green energy, waste recycling, and low-carbon transportation. Entities that have already applied for renewable energy certificates, and factories of enterprises that fall within the scope of carbon fee collection and have implemented emission reduction or prevention measures for over three years are not eligible to apply for voluntary reduction projects. This ensures compliance with the aforementioned "three-plus-five principles." Applicants who originally applied for emission offset projects under the *Management Regulations for Greenhouse Gas Offset Projects* (溫室氣體抵換專案管理辦法) can still proceed with their approved offset plans and apply for reduction credit verification under that regulation, or they can apply to switch to voluntary reduction projects within two years.

The *Management Regulations for Greenhouse Gas Emission Increase Offsets* (hereinafter referred to as the Increase Offset Regulations) deal with the impacts of greenhouse gas emissions resulting from new development projects on climate change and aim to establish a consistent approach nationwide. In the past, central and local governments required developers of projects that required environmental impact assessments (EIAs), such as science parks, industrial parks, or high-rise buildings, to carry out offsets for a certain proportion of greenhouse gas emission increase caused by the projects. The *Principles for Reviewing Greenhouse Gas Emission Offsets of Development Activities* (行政院環境保護署審查開發行為溫室氣體排放量增量抵換處理原則) has also been formulated to include this requirement in EIAs.

In accordance with the Increase Offset Regulations, the entities required to implement increase offset are development activities that require EIAs and cause increases in greenhouse gas emissions. These include factories with annual emissions of over 25,000 metric tons of carbon dioxide equivalents, the construction or expansion of industrial parks, the construction of thermal power plants, cogeneration plants or the addition of generators in them, and the development of high-rise buildings.

Those required to carry out increase offsets must implement them at a rate of 10% per year for ten consecutive years, or they can choose to offset more than 10% each year and complete the offsets early. Violations of the related regulations will incur penalties. For development activities that had passed EIAs before the implementation of the Increase Offset Regulations, the *Principles for Reviewing Greenhouse Gas Emission Offsets of Development Activities* still apply.

Offsets may come from the use of greenhouse gas reduction credits, replacing old vehicles with electric vehicles, replacing air conditioning, lighting, fishing vessel fish-attracting lights, old agricultural machinery, or oxygenation equipment with high-efficiency equipment, as well as the emission reduction benefits achieved beyond the specified targets through voluntary carbon reduction projects under the carbon fee collection system. Public carbon reducing actions such as vehicle replacement,

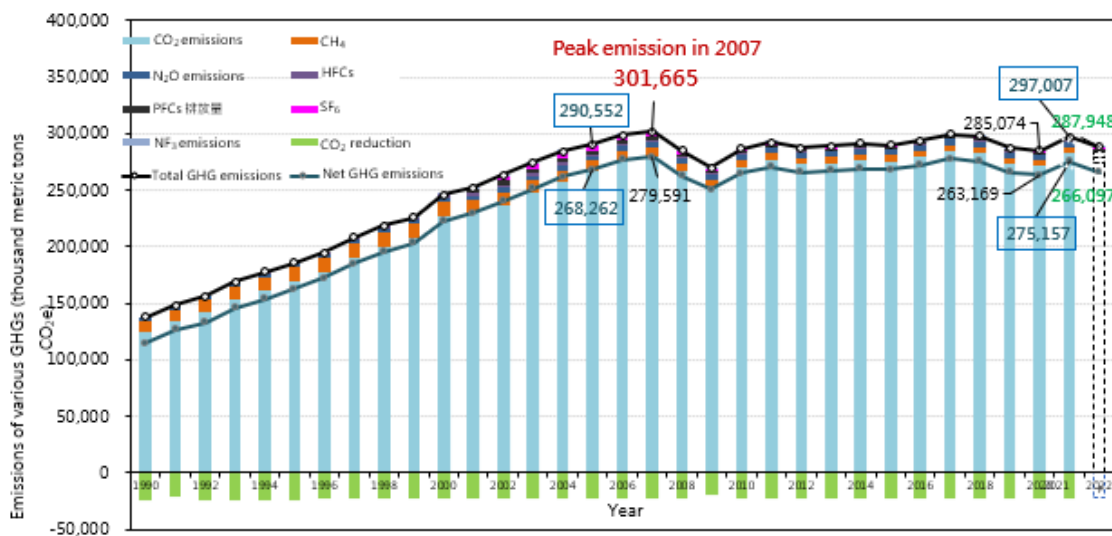
agricultural and fishery machinery replacement with subsidies from the Ministry of Agriculture, or cooperation of businesses with schools, communities and other organizations in replacing air conditioning and lighting equipment are all included. Therefore, the Increase Offset Regulations enable the expansion of participation in carbon reduction for all sectors.

Based on the offsetting needs of existing developers subject to EIAs, it is estimated that there will be a demand for offsets ranging from 0.1 to 1.8 million metric tons per year in the future. Currently, there are 3.18 million metric tons of reduction benefits available to allow offsets to be carried out. The MOENV encourages enterprises and the public to collaborate in carbon reduction and facilitate offsets through trading of reduction benefits.

The MOENV emphasized the need for a diverse set of tools to promote greenhouse gas reduction, and it has announced the *Enterprise Emission Sources Subject to Inventory, Registration and Inspection of Greenhouse Gas Emissions* (事業應盤查登錄及查驗溫室氣體排放量之排放源) as well as amended and promulgated the *Management Regulations for the Inventory, Registration and Inspection of Greenhouse Gas Emissions* (溫室氣體排放量盤查登錄及查驗管理辦法) and the *Management Regulations for Greenhouse Gas Certification and Inspection Organizations* (溫室氣體認證機構及查驗機構管理辦法) to strengthen the system of greenhouse gas inventory, inspection and registration and manage emissions effectively. Meanwhile, the completion of the two subsidiary laws will allow a wider participation by all sectors.

## Goal

By the end of this year, the MOENV will announce the drafts of enforcement rules and management regulations for the trading of reduction credits, regulations for voluntary emission reduction plans and other related regulations. It pointed out that carbon pricing is already an international trend and a key focus of Taiwan's efforts to reduce carbon emissions. By implementing the aforementioned subsidiary laws, Taiwan will gradually establish a carbon pricing system and make steady progress toward the goal of achieving a net-zero transition.



## **2. Power Generators and Large Manufacturers Currently Targeted for Carbon Fee Collection**

**Recently, much attention has been focused on the progress of the carbon fee collection plan and the formulation of relevant subsidiary laws. The MOENV pointed out that the current plan targets the power generation industry and large-scale operators in the manufacturing industry with annual emissions exceeding 25,000 metric tons. Starting from 2024, the annual greenhouse gas emissions of these industries will be included in the pricing.**

The carbon fee rates will be determined by the Rate Review Committee based on factors such as the current state of greenhouse gas reduction in Taiwan, types of emission sources, categories of greenhouse gas emissions, emission scale, voluntary reduction efforts and reduction effectiveness. International carbon pricing implementation and Taiwan's industrial competitiveness will also be considered. The rates will be discussed and decided by the committee in the first quarter of 2024.

In accordance with the *Climate Change Response Act*, enterprises may apply to conduct voluntary reduction plans and be approved of preferential rates by implementing tangible reduction measures, such as switching to low-carbon fuels, adopting negative emission technologies, improving energy efficiency, using renewable energy, or improving processes. However, only enterprises that are able to effectively reduce emissions and achieve specified reduction targets can apply for the approval of the preferential rates. If they fail to meet the targets in a given period, they will be required to make payments to cover the shortfall.

The MOENV emphasized the need for a diverse set of tools to promote greenhouse gas reduction. It has already promulgated many bylaws to strengthen the system of greenhouse gas inventory, inspection and registration and manage emissions effectively.

The MOENV stated that the planning for the carbon fee collection system is ongoing and the system will be implemented after extensive discussions with all stakeholders. For any questions about carbon fee collection or related issues, please contact the carbon reduction hotline at (02) 2322-2050 or email [netzero@moenv.gov.tw](mailto:netzero@moenv.gov.tw).

## **3. Overseas Pollutants Carried by Northeasterly Winds Affect Taiwan's Air Quality**

**The MOENV, taking into account the latest meteorological, modeling, and air quality monitoring results, indicated that the overseas pollutants carried by the northeast monsoon from 15 to 17 October had affected Taiwan's air quality. Western Taiwan and the outlying islands were mostly at an orange alert level, while other areas were at a moderate level. The public was advised to pay attention to changes in air quality and take appropriate precautions and to use public transportation to reduce pollution emissions.**

Starting from the morning of 15 October, overseas ozone (O<sub>3</sub>) and fine particulate matter (PM<sub>2.5</sub>) gradually started affecting the air quality in Northern Taiwan. At 6 a.m., the O<sub>3</sub> concentration at the Cape Fuguei monitoring station was 80 ppb, and PM<sub>2.5</sub> was 24 mg/m<sup>3</sup>. In the afternoon, the effect gradually spread to Central and Southern Taiwan. According to the monitoring data gathered at 2 p.m., Western Taiwan had O<sub>3</sub> levels ranging from 70 to 85 ppb, and PM<sub>2.5</sub> levels were around 25 to 35 mg/m<sup>3</sup>. On the 16th and 17th, the impact of foreign pollutants continued, and the air quality was

mostly at the orange alert level. In Southern Taiwan where the wind speed was weaker, there were brief periods of red-level alerts. Starting on the 18th, the northeast monsoon weakened, and on the 19th, it shifted to easterly winds, reducing the influence from abroad. Air quality in Northern Taiwan and the Hsinchu-Miaoli area improved to a moderate level, while Central and Southern Taiwan remained at moderate to orange alert levels. It was estimated that from the 20th onwards, air quality gradually improved to a good to moderate level.

The MOENV had previously advised local governments to monitor changes in air quality and take appropriate actions, including strengthening emission reductions at large factories, controlling dust at construction sites and storage yards, and conducting inspections in the food industry and for open burning activities. The MOENV also coordinated with Taipower's Taichung and Hsinta thermal power plants to reduce air pollutant emissions in advance. Additionally, on 16 October, the MOENV convened its first contingency meeting in this year's air pollution season in Kaohsiung, which was attended by environmental bureau officials from counties and cities south of Yunlin County. They were reminded to collectively reduce emissions from local pollution sources so as to reduce the pollution burden in downwind areas.

The MOENV advised the public to be vigilant. Sensitive groups, the elderly and children, who have weaker immunity should avoid engaging in vigorous outdoor activities for extended periods, and people should use public transportation as much as possible to reduce pollution emissions. Air quality is greatly influenced by meteorological conditions, and short-term weather remains unpredictable. The public is advised to stay updated on the latest air quality information. The latest air quality changes can be found at the Taiwan Air Quality Monitoring Network website (<https://airtw.moenv.gov.tw>) Different alert levels can be set through the Environmental Info Push App to enhance personal protection and stay informed about air quality information at all times.



**Taiwan Air Quality Index on 15 October 2023**

## 4. Resource Circulation Technologies Exhibited at 2023 Taiwan Innotech Expo

The 2023 Taiwan Innotech Expo opened on 12 October with a joint opening ceremony with the Sustainable Development Pavilion's opening attended by MOENV Deputy Minister Shen Chih-hsiu. The development of innovative resource circulation technology was one of the key policies of the MOENV's Resource Circulation Administration (RECA). The Circulation and Recycling Area in the expo's Sustainable Development Pavilion, curated by the RECA, showcased impressive resource circulation technologies of domestic and overseas enterprises. These technologies included the latest in semiconductor waste recycling, non-toxic gold stripping technology for electronic products, the production of laundry detergent made from calcining golden clam shells, the production of environment-friendly tableware made from sugarcane fibers, as well as high-efficiency waste sorting and processing equipment displayed by overseas manufacturers.

Deputy Minister Shen stated that Taiwan announced the *2050 Net-Zero Emission Pathway* (2050淨零排放路徑) last year, and one of the key strategies under the MOENV's responsibility was "zero waste through resource circulation." The RECA was also established through government restructuring to take charge of the policy planning and management concerning resource circulation. To promote resource circulation technology and connect the resource circulation industry with waste sources, the MOENV invited eight enterprises specializing in innovative resource circulation technologies to participate in the annual Taiwan Innotech Expo, showcasing their innovations in the Circulation and Recycling Area of the Sustainable Development Pavilion.

RECA Deputy Director-General Wang Yueh-bin also attended the opening ceremony and emphasized his administration's commitment to strengthening resource circulation. The administration's policy focuses on three major circulation strategies and two major driving pillars. The strategies are "green design and source management," "energy and resource circulation," and "waste generation-disposal balance and management." The administration aims to establish a smooth circulation network connecting upstream, midstream, and downstream industries while developing innovative technologies and systems to support and drive resource circulation.

Key exhibits in the Circulation and Recycling Area included:

- 1) Semisils, a company that recycles silicon-containing waste generated in the semiconductor manufacturing process with nearly zero pollution technology, producing high-value silicon dioxide. The hydrogen generated during the recycling process is purified to 5N (99.999%) green hydrogen and used as green energy.
- 2) UWin Nanotech, a company that employs a low-carbon, non-toxic "gold stripping technique" to recover gold from electronic products with a purity of 4N (99.99%).
- 3) ShiowLin Environmental Technology, a company that processes hydrofluoric acid, nitric acid, and ammonia-containing mixed acid and converting them into resources.
- 4) Transcene, a company that recycles waste semiconductor packaging adhesive into electronic-grade spherical silicon dioxide.

5) Inm Bem Industrial, a company that recycles semiconductor packaging scraps and develops 100% recyclable green building materials that mimic real wood.

6) Picupi International, a company that recycles and calcines golden clam shells for the production of laundry detergent.

7) Renouvo, a company that developed biodegradable tableware from sugarcane fibers. 8) The Austrian company Komptech GmbH was invited to exhibit high-efficiency waste sorting and processing equipment.

## **5. RECA Assists Resource Circulation Industry in Conducting Carbon Inventories**

**This year, the MOENV's Resource Circulation Administration (RECA) is promoting, with the core concepts of zero waste and circular economy, the low-carbon transition of the resource circulation industry. Starting with over 700 regulated recycling and disposal businesses that handle recyclable waste, the RECA will complete a two-year program to assist these businesses in conducting greenhouse gas inventory. This initiative includes analyzing greenhouse gas emission hotspots, promoting carbon reduction technologies within the industry, establishing a carbon management model and creating green assets for the industry. The ultimate goal is to help the industry achieve a net-zero transition toward material sustainability along with manufacturing industries.**

The RECA indicated that while recycling and disposal businesses are not among the first and second batches of organizations subject to mandatory carbon inventories announced by the MOENV, it had proactively decided to assist these businesses in conducting greenhouse gas inventories. This year, the RECA had organized ten briefings on organizational carbon inventory and eight training sessions for inventory personnel. These events covered topics such as global carbon reduction trends, future buyers' requirements, and how companies should conduct in-house carbon inventories and management. They accelerated the training of sustainable carbon management personnel within the industry and helped establish the industry's own carbon inventory and management capabilities.

Based on the characteristics, processes, equipment, and raw materials (fuels) used in the waste recycling and disposal industry, the RECA has designed a customized carbon inventory tool called "Carbon Detectives" to help businesses complete reports quickly. The RECA has also collected information on relevant domestic and overseas carbon reduction technologies, categorized and compiled it into carbon reduction technology manuals based on industry characteristics. Additionally, it has created a series of "Sustainable Carbon Management and Inventory Cheat Sheets" to illustrate simple and easy-to-understand carbon management methods, promoting carbon reduction technologies across the entire industry and enhancing sustainable carbon management capabilities.

Through these efforts, the RECA has already provided assistance to 410 recycling and disposal businesses in conducting organizational carbon inventories, helping these businesses embark on the path to carbon reduction.

## **6. Addressing Waste Disposal through Diversified and Waste-to-Energy Means**

**Waste management has become a significant environmental concern in recent years. To address waste disposal issues, the MOENV has been actively promoting various measures, including**

**continuous efforts to reduce waste at the source, assistance to local governments in increasing waste processing capacity, and coordination with other government agencies to establish more facilities for industrial waste processing and to convert high-heat waste into fuel, addressing waste disposal issues through diversified and waste-to-energy means.**

Taiwan's waste incineration facilities process 6.5 million metric tons a year, with household waste making up 4.7 million metric tons and industrial waste 1.8 million metric tons. However, the annual amount of household waste that needs to be processed is 4.9 million metric tons. Due to competition from industrial waste, there are 0.2 metric tons of household waste that cannot be incinerated each year and must be disposed of in landfills or compacted. While these are considered appropriate waste management methods, local authorities must properly handle landfill coverage and management.

To address the waste disposal problem, the MOENV is implementing various strategies, including promoting waste reduction at the source, assisting local governments in increasing waste processing capacity, and coordinating with other government agencies to establish more facilities for industrial waste processing and convert high-heat waste into fuels.

Regarding waste reduction at the source, the MOENV has implemented measures such as regulating the use of plastic bags, disposable tableware, beverage cups, plastic trays, and packaging boxes, and encouraging the public to carry personal utensils. In recent years, it has also promoted waste reduction in lodging toiletries and online shopping packaging, and is continuing to promote control measures in various areas, including guiding changes in product design, incorporating container-circulating services, and material restrictions.

As for assisting local governments to increase waste processing capacity, the annual incineration capacity has been maintained at 6.5 million metric tons. This year, the Taitung Incineration Plant and the gasification furnace of Taiwan Cement in Hualien have begun operation, and the Hsinchu County Incineration Plant is expected to be completed by the end of next year. These developments will increase the annual processing capacity by 270,000 metric tons, gradually relieving the pressure on waste disposal. Additionally, with the future upgrade of the Tainan City Chengxi Incineration Plant, the total incineration capacity is estimated to increase by 500,000 metric tons per year starting from 2028, reaching an annual capacity of 7 million metric tons.

To address the issue of industrial waste competing with household waste for incineration processing, the MOENV has worked with the Ministry of Economic Affairs (MOEA) and other agencies to assess industrial waste capacity and propose processing capacity enhancement measures. Between 2022 and 2025, the MOENV plans to establish 12 additional industrial waste processing facilities, with an estimated increase in capacity of 485,000 metric tons per year. Furthermore, it has coordinated with the MOEA and the National Science and Technology Council to allocate 27.41 hectares of land zoned for environmental use to enhance capacity for industrial waste processing and gradually divert industrial waste away from incineration facilities.

In addition, for high-heat waste, mechanical sorting will be used to separate materials with high heat value from waste, and convert them into solid recovered fuel as an alternative fuel for boilers, cogeneration plants, coal-fired power plants, or cement kilns, relieving the burden on incineration facilities.



The MOENV stated that it had successfully secured approval from the Executive Yuan for the second phase of the diversified waste management plan. Over the six years from 2023 to 2028, the central government will allocate NT\$9.8 billion to assist local authorities in addressing waste management issues through diversified means.



Waste mechanical sorting and packing materials properly placed

## 7. Workshop Held to Strengthen Cooperation between Prosecution, Police and Environmental Authorities

The MOENV's Environmental Management Administration (EMA), in collaboration with the Taiwan High Prosecutors Office of the Ministry of Justice (MOJ), organized the 2023 Workshop on Strengthening Investigation of Environmental Crime on 23 September, 2023. The event was attended by Executive Yuan Minister without Portfolio Chang Tzi-chin, MOJ Minister Tsai Ching-hsiang, MOENV Deputy Minister Shen Chih-hsiu, and Supreme Prosecutors Office Head Prosecutor Lu Wen-chung, as well as some 80 representatives from the MOJ, the Supreme Prosecutors Office, district prosecutors' offices, the National Police Agency, and county and city environmental bureaus. The purpose was to engage all participants in discussions about the *Enforcement Plan for Investigating Environmental Crime* and the *Prosecution, Police and Environmental Authorities Coordination Platform* to enhance efforts to combat environmental crime.

Lin Zuo-xiang, EMA Deputy Director-General, expressed that since the collaboration between environmental agencies, prosecutors, and the police began in 2011, a cooperative model had been developed. In response to evolving techniques used in environmental crimes, strategies were developed through cross-agency cooperation to utilize technology to enhance investigative efficiency. The authorities had successfully uncovered cases such as the nation's first air pollution case related to exhaust gas bypass, major food sludge cases, heavy metal wastewater pollution in industrial areas, and cross-county waste acid disposal cases. The positive results speak louder than words.

Chang Tou-hui, Chief Prosecutor of the Taiwan High Prosecutors Office, pointed out that to implement the Executive Yuan's land conservation policy, the *Judicial Investigation of Environmental Crime Cases Implementation Plan* (檢察機關查緝環保犯罪案件執行方案) was developed in 2011. The purpose was to establish a mechanism for joint investigations by the prosecution, police and environmental authorities to handle environmental crime cases. The recent amendment to this plan focused on encouraging outstanding personnel. To promote source tracing and expand investigations of

environmental crimes, district prosecutors' offices were encouraged to give preferential rewards to outstanding personnel. Moreover, the amendment placed emphasis on the restoration of polluted environment to their original state by unlawful businesses as a key area for performance evaluation.

To exchange on crime investigation experiences, Prosecutor Chen Hsiang-wei from the Taichung District Prosecutors Office shared with attendees the "Waste Acid Washing Liquid Case," and Kuo Chen-hsiang, Technical Specialist at the EMA's Northern Regional Environmental Management Center presented a case involving discharge bypass by a technology company. Representatives from the Taichung and Changhua district prosecutors' offices also gave special presentations on the "Development of the Prosecution, Police and Environmental Authorities Collaboration Platform" and on "How to Create the Greatest Risks for Environmental Crime Syndicates." Attendees found these presentations highly beneficial.

In his address, Minister without Portfolio Chang Tzi-chin shared his experience in inspections and emphasized how the collaboration between environmental agencies, prosecutors, and the police has been crucial in successfully solving major environmental crime cases. He expressed his gratitude to all the environmental, judicial, and police partners involved in protecting the environment. MOJ Minister Tsai Ching-hsiang remarked that the review video in the workshop provided a deeper understanding of the challenges involved in environmental law enforcement. He stressed the importance of environmental restoration and emphasized that, in the future, judiciary measures would be used to hold businesses accountable for environmental restoration. He also expressed his gratitude to the MOENV for organizing the Gold Environment Awards (金環獎), which greatly encourage his law enforcement colleagues.

Deputy Minister Shen stated that on 22 August, 2023, the MOENV established four administrations and one academy. The original Bureau of Environmental Inspection was upgraded to become the EMA, which would focus on digital technological enforcement and pollution prevention in the future. Through the collaboration between environmental agencies, prosecutors and the police, more than 700 illegal waste dumping sites had been cleared. In the future, the MOENV would continue to promote the restoration of illegal waste dumping sites to protect our homeland.



**2023 Workshop on Strengthening Investigation of Environmental Crime**

## **8. Government Agencies Recognized for Excellent Performance in River Garbage Removal**

**On 4 October, the MOENV held the 2022 National River and Groundwater Garbage Removal Evaluation and Award Ceremony. The MOENV commended 24 outstanding government agencies for their performance in the evaluation, and recognized the collaborative efforts across government departments. It also encouraged the continued implementation of the “Respect the Ocean” (向海致敬) initiative, which promoted three key cleanliness maintenance measures: regular cleaning, immediate cleaning, and emergency cleaning. These measures help maintain the cleanliness of land and water bodies, safeguarding rivers and marine resources.**

The results of the 2022 evaluation were impressive, with an overall improvement in the scores compared to previous years. Out of the 49 government agencies evaluated, 19 counties and agencies received the high distinction honors, while five agencies, including the New Taipei City Government, Yunlin County Government, Miaoli County Government, the Ninth River Management Branch of the Water Resources Agency, and the Nantou Management Office of the Irrigation Agency, received the excellence honors. Notably, six government agencies, including Taipei City, Tainan City, Hsinchu City, Hualien County, Taitung County, and the Third River Management Branch of the Water Resources Agency, received the high distinction honors for four consecutive years since the evaluation was launched in 2019.

During 2022, the nationwide efforts included 11,266 garbage removal operations and 19,360 inspections, with a total of 6,876 metric tons of garbage removed. Among the removed garbage, 4.5% was human-made, with the majority comprising garbage packs (57%) and plastics (13%). The winning counties and cities this year implemented distinctive approaches to garbage removal in rivers, including Taipei City's use of mechanized garbage retrieval equipment and boats and seamless transfer of garbage by dedicated vehicles, Tainan City's installation of real-time monitoring at tourist spots, Hsinchu City's increased patrolling and reporting by patrol teams, Hualien County's utilization of drones for inland water body inspections, and Taitung County's addition of garbage removal points for enhanced cleaning.

The MOENV emphasized that protecting rivers is one of its vital missions. Preventing garbage from damaging river water quality requires the cooperation of the entire nation and ongoing maintenance efforts. Everyone is encouraged to maintain a clean living environment and work together to achieve the sustainable vision of "clean water allows fish to swim in and welcomes people." Besides participating in river and beach cleaning activities, members of the public are urged to reduce the use of single-use products in their daily lives, practice proper waste sorting and disposal, and refrain from littering, all of which contribute to maintaining a clean river environment and ecological balance.

## **9. MOENV and EETO Co-organize Beach Cleanup for the Fifth Year**

**On 14 October, the MOENV, in collaboration with the European Economic and Trade Office (EETO), 14 EU member states offices in Taiwan, the New Taipei City Government, and various other agencies,**

organized a beach cleanup at Xinjinshan Beach in New Taipei City. The event was led by Minister without Portfolio Chang Tzi-chin of the Executive Yuan and Head of the EETO Filip Grzegorzewski and participated by a total of 150 people, including the staff from the EETO, EU member states offices in Taiwan, the Ministry of Foreign Affairs, the Forestry and Nature Conservation Agency, the New Taipei City Government, and the MOENV. Together, they collected approximately 345 kg of general waste and 87 kg of recyclable materials.

Aimed at raising awareness of climate change and promoting healthy oceans, the event emphasized that environmental issues like these have no borders. This marked the fifth time the MOENV had collaborated with the EETO for beach cleanups, with regular events held every year since 2018. The initiative encourages their staff to invite their family and friends to join them in taking concrete actions to preserve the coastal environment.

The MOENV's Climate Change Administration stated that the Executive Yuan had approved the *Respect the Ocean—Coastal Cleanliness Maintenance Program*. This program focuses on reducing waste at its source and established regular, immediate, and emergency cleaning mechanisms to ensure that every part of the coast remains clean and is looked after. Beach cleanups are an essential part of environmental education, allowing participants to experience the importance of waste reduction at its source and the protection of marine environments through practical actions.

Head of the EETO Filip Grzegorzewski pointed out that environmental protection is a global issue that no single country or region can address it alone. Cooperation is essential and the EU needs partners and friends. He expressed gratitude for Taiwan's efforts in this regard and congratulated the MOENV on its establishment. He also noted that Taiwan is increasingly prioritizing climate and environmental actions.

Following the cleanup, the collected waste was arranged to form the shape of "zero," symbolizing net-zero emissions and calling on the public to pay more attention to climate change issues. The MOENV also implemented environment-friendly measures at the event, such as avoiding the setup of a large stage, providing reusable eco-friendly water cups instead of bottled water, and reusing event paraphernalia and beach cleaning tools. All of this helped reduce waste and carbon footprint. Participants were encouraged to engage in beach cleanup activities as well as practice source reduction in their daily lives. Simple changes in habits can contribute to the preservation of coastal environments and ecosystems, giving the Earth a cleaner ocean.

## **10. Environmental Education Picture Book Carnival: Learning while Having Fun**

Every year, both adults and children eagerly anticipate the *Environmental Education Picture Book Carnival* organized by the MOENV. This year, the event took place on 14-15 October at Huashan 1914 Creative Park in Taipei City. It featured environmental education picture books selected by the environmental agencies of 22 counties and cities nationwide for having local environmental characteristics and being suitable for children. The exhibition provided activities such as picture book reading, storytelling, theatrical performances, and parent-child do-it-yourself projects, allowing parents and teachers to lead children in enjoying the pleasures of reading together.

The *2023 Environmental Education Picture Book Carnival* showcased 78 environmental education picture books that won awards from environmental agencies of counties and cities nationwide. These books cover environmental issues such as green living, climate change, food conservation, ocean



conservation, resource circulation and recycling, and environmental degradation. The MOENV hoped that, guided by environmental education picture books with local characteristics, teachers and parents could discuss local environmental issues with children and share ideas about conservation, instilling in them environmental awareness from an early age. Children, while brainstorming solutions to environmental problems, could also reflect on how to put environmental protection into practice in their daily lives.

The event featured a "Love to Read Picture Books Area," allowing children to understand the environmental crisis brought about by the pursuit of convenience through vivid illustrations. Children also learned how to protect the environment through daily actions. In addition, there was the "Love the Earth Story Area" on the first floor and the "Protecting the Environment Story Area" on the second floor, where lively storytelling and theatrical performances of picture book stories aimed to inspire children's environmental awareness and convey the importance of environmental protection.

To ensure children enjoy their reading experience, the exhibition included a "Children Love Picture Book Reading Area," showcasing 235 environmental education picture books that won awards from the environmental agencies of counties and cities nationwide from 2019 to 2021. Additionally, 25 stories from the displayed picture books were recorded for the MOENV's "Listen to Stories, Love the Environment" podcast program. This unique exhibition of environmental education picture books provided parents, teachers, and children with the opportunity to learn and have fun together, igniting the love for the environment through reading.



**Environmental Education Picture Book Carnival opening**

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