Major Environmental Policies

December 2024

1. National Development Fund Approves NT$10 billion As MOENV's Green Growth Fund

The MOENV has come up with the Green Growth and Net-Zero Industries Enhancement Plan to accelerate green growth and reach the goal of net-zero transition by 2050. The plan was approved by the National Development Fund (NDF), Executive Yuan on 29 November 2024, with NT$10 billion granted as the Green Growth Fund. In the next decade, the MOENV will strengthen investments in emerging net-zero sustainable industries, introduce private capital to invest, accelerate the development of emerging net-zero industries in Taiwan, and create more green job opportunities to stimulate new momentum for Taiwan's green growth.

The MOENV mentioned that under the 2050 net-zero goal the government-led green investments have become an international trend. For example, Japan has set a budget of two trillion yens to establish the Green Innovation Fund, and the US has promulgated the Inflation Reduction Act. To achieve the goal of "green growth and 2050 net-zero transition" in the President's National Project of Hope, the five strategies of net-zero transition are expected to drive the emerging net-zero sustainable industries. On top of that, Taiwan will soon start collecting carbon fees, and industries are in desperate need of carbon reduction. As the integrator and promoter of net-zero climate, the MOENV has started working on green growth investment projects in September 2024 and formulated the Green Growth and Net-Zero Industries Enhancement Plan by collecting opinions from interested investors, such as government agencies, experts, scholars, and Taiwan Venture Capital Association. Today, the plan was approved by the NDF.

The MOENV explained that the plan is to use the NDF-approved funds and work with investors to invest together on domestic enterprises engaged in relevant emerging net-zero and sustainable efforts or foreign firms that have major business activities in Taiwan. However, these do not include publicly listed or OTC companies. The investment priorities go to resource circulation, development of sustainable and forward-looking energy technologies, technological energy storage, enhanced energy conservation, improvement of energy efficiency, caron capture and reuse, development of negative carbon technologies, digital technologies, and development of low-carbon (reduction) technologies and climate change adaptation technologies. No more than NT$150 million shall be invested in a single enterprise, no single investment shall not exceed NT$100 million, and the public equity shall not exceed 49% of the paid-in capital of the invested enterprise.

The MOENV pointed out that net-zero transition requires innovative technologies. Through the application of innovative technologies, the Green Growth Fund will join

force with private capitals to accelerate carbon reduction and improve resilience while creating employment opportunities. The MOENV will proceed to finalize regulations regarding investment preparations, set trust funds, and establish the project office based on the plan approved today, and hold seminars to review and select investors. It is expected to receive investment applications from the second quarter in 2025, which will mark an important step in Taiwan's green growth.

2. Regulations of Fine Determination Revised for Violations of *Water Pollution Control Act*

The Ministry of Environment (MOENV) promulgated the amended Regulations of Fine Determination for Violations of the *Water Pollution Control Act* (違反水污染防治法罰緩額度裁罰準則) on 7 November 2024 in order to specify the criteria for the amount of fines for violations of the *Water Pollution Control Act* (水污染防治法) based on the circumstances and resulting impacts of the violations. Key amendments include adding the violation scenarios and calculation basis for pollutions caused by improper collection and disposal of wastewaters generated in campgrounds; increasing fines for food enterprises whose scales are smaller than those of controlled enterprises, as specified by the act, regarding distances between wastewater discharges and water bodies or coastal areas; specifying that commutation is not applicable for both discharge bypasses and first violation within three years of which the circumstances are serious; and determining penalties for pollutions of water bodies caused by insufficient contingency measures.

The MOENV further explained the four key amendments of the regulations as follows:

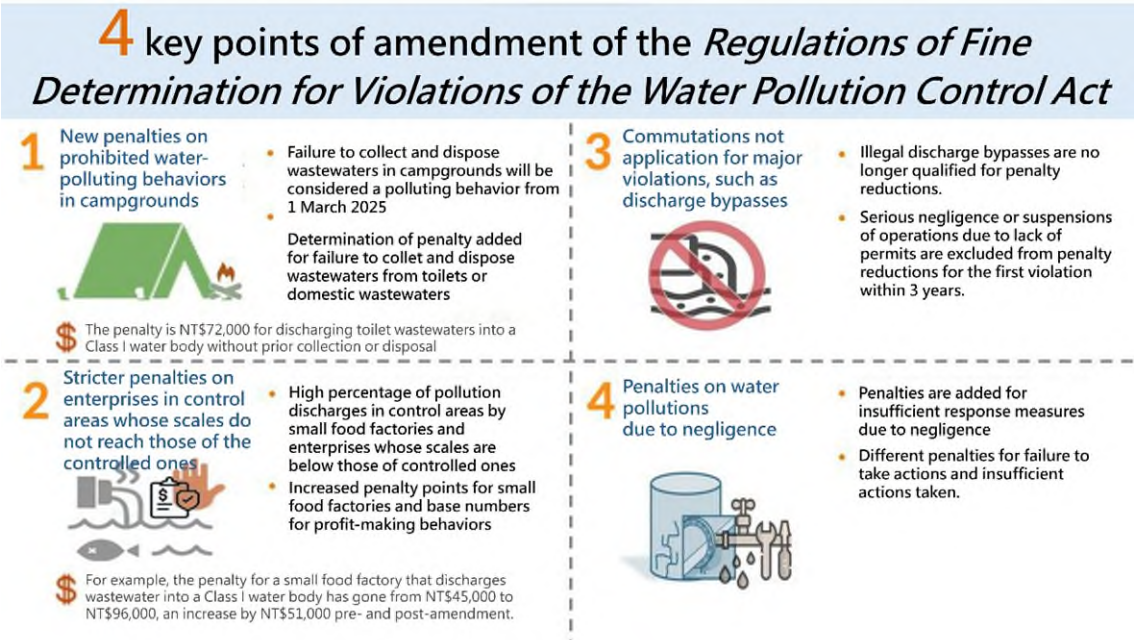
I. **New penalties on prohibited water-polluting behaviors in campgrounds:** The violation scenarios and calculation basis are added as improper collection and disposal of wastewater generated in campgrounds has been listed as a polluting behavior under the amended Prohibition of Water-Polluting Behaviors (禁止足使水污染行為), which was announced on 16 January 2024 and took effect since 1 March.

II. **Stricter penalties on enterprises in control areas whose scales do not reach those of controlled enterprises:** There have been reports of discharges of high-concentration wastewater from food manufacturing, fermentation and slaughtering processes, committed by enterprises whose scales do not reach those of ones listed for control. Therefore, fine calculation points and base numbers of penalties for violations are revised and tightened to deter any violations.

III. **Commutation not applicable for major violations, such as discharge bypasses:** Violations such as discharge bypasses do not align with the legislative purposes of commutation and, therefore, are excluded in this amendment. Also, commutation is not applicable for serious offenses or violations in which permits are not acquired and hence are subject to suspension of operations, even if it is the first violation in three years.

IV. **Penalties on water pollutions due to negligence:** The amount of fines was usually determined based on "failure to take emergency response measures as required" regarding water body pollutions caused by enterprises due to negligence. However, the degree of accountability varies as "failure to take emergency response measures as required" includes "failure to take emergency response measures" and "insufficient emergency response measures taken", and, therefore, the amendment specifies penalties for different violation scenarios.

The MOENV stressed that the amendment this time has taken into consideration the practical law enforcement needs within the scope of penalties authorized by the current *Water Pollution Control Act*. Calculation of penalty amount is formulated as a reference for the MOENV and local environmental protection authorities to impose fines in order to strengthen the enforcement of penalties for violations of the *Water Pollution Control Act* and maintain the water quality of rivers and surface water bodies.



The MOENV announced the amended *Regulations of Fine Determination for Violations of the Water Pollution Control Act*

3. MOENV Adds PFAS standards to Ensure Safety and Quality of Drinking Water

The Per- and polyfluoroalkyl substances (PFASs) are persistent organic pollutants and carcinogenic to human body and pose potential health hazards if the find their way into the drinking water supply system. In response to international control trends and to tighten controls, the *Drinking Water Quality Standards* (飲用水水質標準) has been introduced for compulsory regulations with PFAS-related standards and relevant requirements added to Article 3-1.

I. **Introduction of legal controls through addition of PFAS standards and relevant regulations**

Aiming to intensify control in response to the PFASs Control Action Plan, approved by the Executive Yuan on 22 October 2024 and the international control trends, the MOENV has introduced the Drinking Water Quality Standards for compulsory regulations. Article 3-1 has been amended, with PFAS standards and control requirements added. Revisions include strengthened voluntary testing and management for operators of water purification and treatment equipment within two and a half years stating from 2025; and mandatory reports and proposals of "drinking water quality management plans" for those who exceed the maximum of PFAS limits. Execution of drinking water quality management plans are to be completed within two years if it requires equipment purchase or constructions, or three months if no constructions are involved.

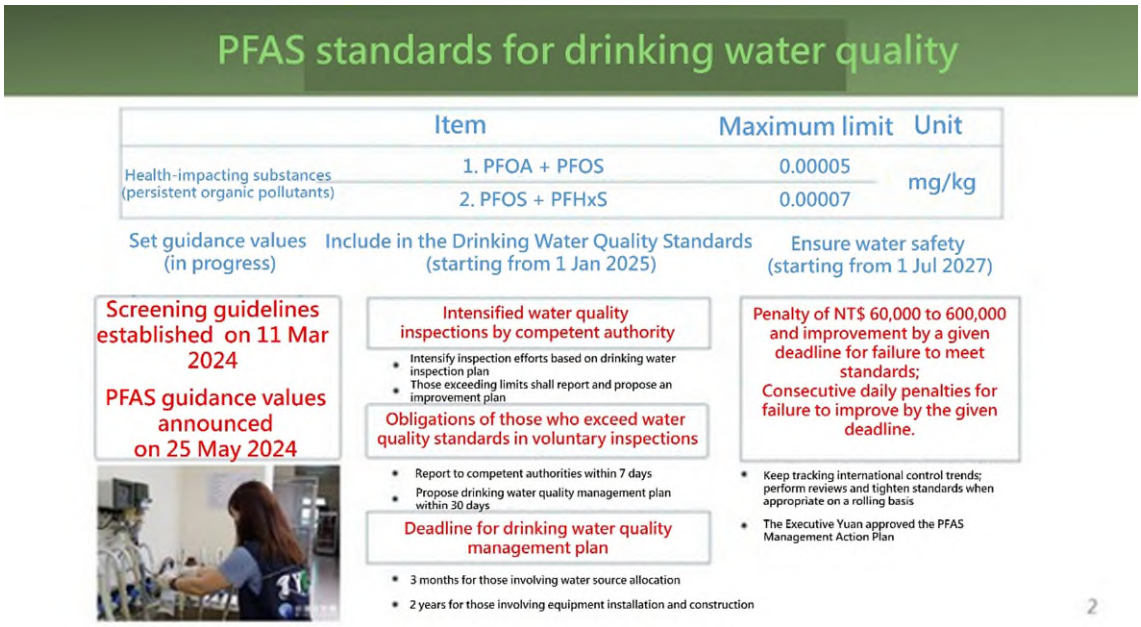
II. Intensified random inspections since 2025 and required improvements for those who fail the inspections

The MOENV stresses that the competent authorities will initiate the Drinking Priority Auditing and Control plan in 2025. Large drinking water treatment facilities (capacities of 20,000m^3 or more, approximately 60 facilities) are listed for priority intensified random inspections, and smaller ones (capacities of 20,000m^3 or less, approximately 317 facilities) will then go through random inspections year by year. Those exceeding the maximum PFAS limits are required to propose an improvement plan and execute it accordingly. Starting from 1 July 2027, a fine between NT$60,000 and NT$600,000 will be imposed directly on those which fail to mee the PFAS standards for drinking water. They will be given a deadline for improvement and fined continuously for days for failure to improve by the deadline.

III. In line with international control efforts through reviews and revisions on a rolling basis or tightened standards

The MOENV has developed the Guidelines for Testing, Management and Screening of Emerging Concerned Items for Drinking Water Quality on 11 March 2024 as reference for screening out, determining guideline values of, and testing and managing emerging concerned items. With guideline values set before carrying out control measures, the utility water supply industry is encouraged to accelerate improvement of water purification and treatment facilities, and efforts will be taken to continue to monitor international control trends and conduct reviews and revisions or tighten standards on a rolling basis in order to ensure drinking water safety. Furthermore, the MOENV added that the administrative procedures including draft preannouncement and discussions have been finished for this amendment of the *Drinking Water Quality Standards* according to the *Administrative Procedure Act* (行政程序法).

PFAS management path for drinking water quality



PFAS standards for drinking water quality

4. MOENV Joins Force with NASA to Enhance Monitoring in Asia and Improve Regional Air Quality

The MOENV invited NASA, Bangladesh, Indonesia, Korea, Malaysia, the Philippines, Singapore, Thailand and Vietnam for the 2024 7 South East Asian Studies (7-SEAS) and KPEx Workshop" on 12 and 13 November 2024. Other than presentations of the results of 3D air quality experiments between NASA and Taiwan in Kaohsiung and Pingtung in February and March 2024, the participating countries talked about the 7-SEAS, the synchronized international urban air quality experiment that is about to

take place from 2025 to 2026. It is hoped that this experiment helps jointly combat air pollution by shedding some light on the air quality in major cities across Asia and issues of transboundary air pollution transmission and understanding causes and changes of regional air pollutions.

The MOENV indicated that the 7-SEAS project is an international atmospheric environment monitoring activity designed and carried out jointly by NASA, Southeast Asian countries and Taiwan. The primary purpose is to investigate long-distance, transboundary transmissions of pollutants generated by burning agricultural wastes in Southeast Asia, and their interactions with the atmospheric environments, radiations and climates. As the continuation of long-lasting cooperation in the past, the 7-SEAS project has started a new chapter of urban air quality study based on this solid foundation.

The MOENV pointed out that Taiwan's experiment in Kaohsiung and Pingtung combined with NASA's Asian air quality plan on flights to break down the characteristics of 3D distribution and transmissions of local air pollutions and discuss the formation and distribution mechanism of secondary pollutions. Analytic models were introduced for integration and verification to improve the ability of air pollution controls and assessment. All ground-based, vertical and flight monitoring results were integrated to calibrate satellite observation, which has extremely extensive benefits for the needs and applications of international environmental monitoring. The 3D air quality experiment in Kaohsiung and Pingtung has facilitated cooperation between industries and academia for the development of multiple domestic-produced air quality sensing and monitoring systems to stay consistent with measurement data collected by NASA's flights. It has led to successful analysis of vertical changes in air pollution and provided an important scientific basis for strategy development with potentials of great commercial values. Efforts are currently in place to expand the research to the Southeast Asian market.

In his speech, Dr. Hal Maring, 7-SEAS project manager from the NASA headquarter, expressed his gratitude to the representatives from the participating countries and praised Taiwan's work on integrating 3D monitoring and research capacities in the experiments conducted in spring 2024, recognizing Taiwan's technologies and contribution in environment monitoring. The workshop covered atmospheric monitoring, meteorological observation, atmospheric chemistry and long-distance transmission as well. Through discussions with global scholars and experts in this event and future international cooperation, the MOENV hoped to improve regional and urban air quality , demonstrate Taiwan's monitoring capabilities, and increase Taiwan's visibility in the world.

Participants of the 2024 7-SEAS and KPEx Workshop

Minister Peng Chih-Ming presents a model of monitoring station to NASA representative

5. MOENV Keeps Plastic Reduction Policies Despite No Agreement Reached at Global Plastic Treaty INC-5

The INC-5 of Global Plastic Treaty commenced in Busan, Korea on 25 November 2024, with over 170 government organizations, over 400 observers, and many NGOs attending. The MOENV sent delegates to participate as well to observe and track progress of discussions on various issues. The conference came to an end after 44 meetings within seven days. Participating parties were unable to reach any agreement, the representatives from different countries still recognized the importance plastic pollutions and hoped to make substantial progresses in the next conference. Taiwan is committed to facing international plastic issues and stands firm on policies of plastic reduction and restriction. The next step will be to develop innovative methods and measures and strengthen social communications based on

existing successful experience and the goal of plastic restriction set in 2018. The MOENV will build a green growth model focusing on source reduction and circular economy and work together with the world on dealing with conventional plastic pollution.

The MOENV Minister Peng Chih-Ming said in the press conference that the world is facing a significant challenge in terms of transition from the use of plastics. Like the global climate conventions with the "common but differentiated responsibilities" (CBDR), the Global Plastic Treaty involves multiple stakeholders, and the international society has reached a mutual consent. Taiwan is determined to tackle international plastic issues and stands firm with the policy of plastic reduction and restriction despite the delay in the progress of global discussions on the Treaty. Innovative methods and measures will be developed based on existing successful experiences and the goal of plastic restriction set in 2018 to handle oppositions and difficulties during the promotion. The MOENV is expected to start talking with all sides in the first half of 2025 and enhance communications. A green growth model centered on source reduction and circular economy will be designed to tackle conventional plastic pollution issues in the hope to work together with the world and contribute to the sustainable development of the world's environment.

Director General Lai Ying-Ying further pointed out that the draft of the Global Plastic Treaty covers 32 articles and Articles 2, 3, 5, 6, 8 and 11 draw lots of attention. The opinions collected are included behind every article in brackets. The draft clearly shows many disagreements among different countries regarding wording and provisions. For example, there are disagreements on definition and scope of terms such as plastics and plastic pollution (Article 2); requirements of plastic products should take into consideration individual countries' circumstances and abilities to identify problematic plastic products, management levels (global or national), and standards of products or chemical substances listed for controls (Article 3); and plastic product designs should consider individual countries' circumstances and abilities to strengthen plastic product management (Article 5); Other disagreements include that, to set the goal of global production reduction, comprehensive assessments should be conducted on risks and consequences for individual countries (Article 6) and whether waste management should be legally compulsory or voluntary (Article 8). Also, it is necessary to consider individual countries' capabilities and establish a specific multilateral mechanism with funds as support to help developing countries in their transitions (Articles 11 and 12).

The MOENV added that a close look into the treaty draft that came out as the result of INC-5 revealed the correspondence to the five directions of the policies of plastic resource circulation currently promoted in Taiwan. The directions include: 1. Avoid unnecessary consumption, encourage reuse, and use regulations to restrict or ban the use of single-use plastic products in stages and under different categories; 2. Improve recyclability of plastic products, design green design guidelines, and provide incentives; 3. Enhance plastic recycling and reuse, establish a four-in-one recycling system, and introduce technical tools and innovative technologies in the future; 4. Encourage the use of recycled and alternative materials, and establish a review and verification mechanism; and 5. Minimize impacts of plastic garbage on the environment, and build a cross-departmental mechanism of cooperation, such as the Respect the Ocean –

Coast Cleanliness and Maintenance Program. The MOENV will stay in line with the global trend on plastic controls based on the negotiation of the Treaty for reviewing and updating future goals and measures of plastic reduction.

The Resource Circulation Administration sent a delegation to Busan at the INC-5 to track the meeting progress and collect international information. The delegation included government and industry representatives and academic researchers, who are expected to bring back the latest progress of the conference and opinions from different countries. In addition to the official meetings during the Global Plastic Treaty conference, the Korea Ministry of Environment and Korea Environment Corporation (K-eco) organized a series of side events. A total of 40 side events focused on "Rethinking Plastic Life", including promotions, campaign activities, seminars on feature topics, financing consultations, and result presentations with discussions on issues such as the system of extended producer responsibility. In future negotiation meetings or conferences of the parties, Taiwan will look for opportunities inside events to share its experiences in extended producer responsibility and systems regarding recyclables as references for the world.

Despite the failure to reach an agreement in INC-5, Director General Lai expressed that Taiwan will keep a close eye on the Global Plastic Treaty's following development and coordinate with other agencies in joint promotion based on the Treaty's negotiation progress and individual agencies' responsibilities Efforts will be taken to work with Plastic Alliance and industries to develop responding solutions in order to help the plastic industry with the transition. Currently, the MOENV is working on revising the *Circular Economy Promotion Act* (循環經濟促進法) to provide legal supports, further facilitating circulation and reuse of plastics resource.

MOENV Minister Peng Chih-Ming explains the close watch on the INC-5 progress for UN's Global Plastic Treaty and also the enhanced domestic plastic reduction strategies and continuous communications with industries.

Director General Lai Ying-Ying of Resource Circulation Administration states that the Global Plastic Treaty is an UN-set agreement for plastic pollution control and explains the INC-5 agendas and the Treaty's key points.

MOENV has live connections online with the INC-5 in Busan, Korea with Professor Fan Kuo-Shu describing the opening ceremony and suggesting key aspects

Agreement unable to be reached for the Global Plastic Treaty

Taiwan actively tackles international plastic issues

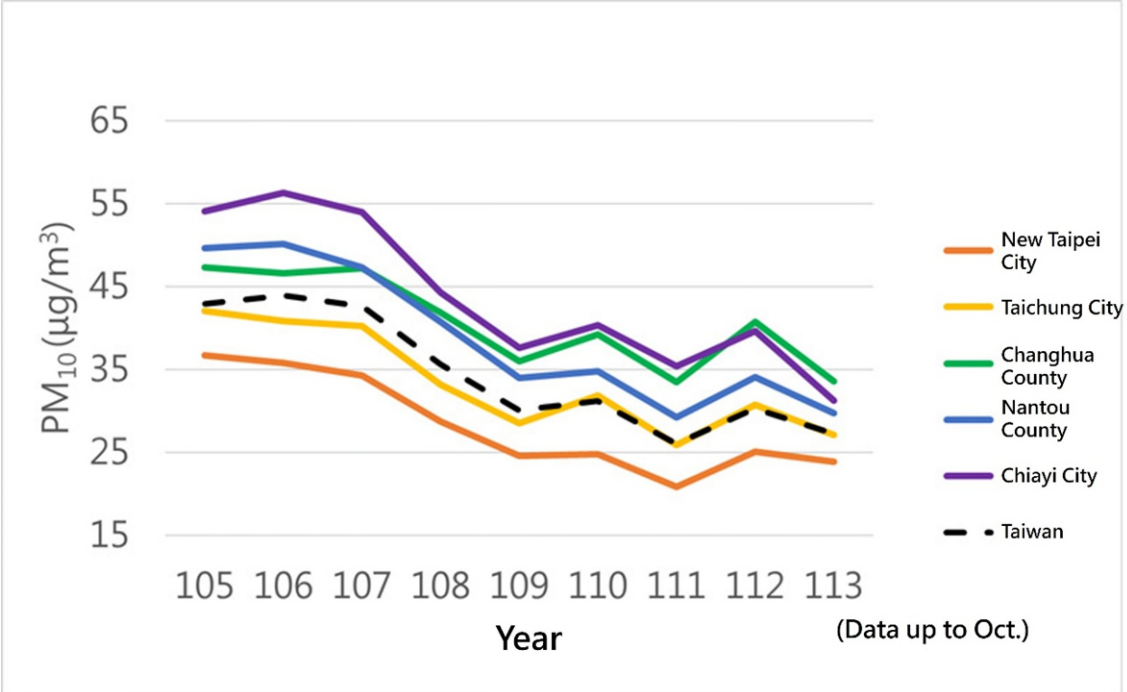
6. Revisions Preannounced on Designation of Air Pollution Control Zones

The MOENV preannounced the draft amendment of the Air Pollution Control Zones in Special Municipalities, Counties and Cities. Carried out according to the amended *Air Quality Standards* (空氣品質標準), promulgated on 30 September 2024, the amendment has adapted more rigorous determination methods. Other than raising requirements for concentrations, the previous determining method with averages of data across all monitoring stations are replaced as counties, cities, and special municipalities are mandated to have all air quality stations within the jurisdictions meet the criteria to be listed as Class II control zones (areas meeting the standards). For Class III control zones (areas failing to meet the standards), the MOENV will join force with local environmental protection bureaus to implement stricter controls, including adopting the best available control technologies for newly identified pollution sources and cutting down pollutions of existing sources. In addition, the air

pollution control fees are higher for a Class III control zone, which will help continuously improve air quality as more resources will be used for pollution controls and to encourage enterprises to invest in pollution control equipment.

The MOENV stressed that the counties and cities listed as Class III control zones (areas failing to meet standards) not because their air quality deteriorates but because more rigorous standards are adopted. Among all pollutants, the number of Class III control zones for suspended particulates (PM_{10}) has increased from six to 11. The additional five counties/cities (New Taipei City, Taichung City, Changhua County, Nantou County and Chiayi City) are included because the annual and daily average PM_{10} standards have increased from 50 and 100 μg/m^3 to 30 and 75 μg/m^3, respectively, and the determination method is changed to that all monitoring stations within the jurisdictions are to comply with the standards. Since implementation of pollution controls in 2016, these five cities and counties have shown a significant decrease in PM_{10}, a performance no less impressive than that of other counties and cities, by 35%, 36%, 29%, 40% and 42%, as shown in the figure below. For particulate matters ($PM_{2.5}$), there are still 14 cities and counties that remain Class III control zones, whereas all counties and cities are Class III control zones for ozone (O_3) except for Yilan County, Hualien County and Taitung County.

The MOENV pointed out that the control tool, which designates air pollution control zones, gives city and county governments the authorization to take more aggressive actions for pollution sources, such as controls on sources including street dusts, open-air burning and construction activities. The aim is to continue to reduce PM_{10} pollution and tighten controls on precursors of $PM_{2.5}$ and O_3 which are generated by industrial emissions and traffic pollutions, ultimately improving Taiwan's air quality and safeguard citizens' health.



Nationwide PM10 concentrations and those in the five cities and counties newly listed as Class III control zones

7. Ministry of Environment Signs MOU with TSMC to Promote Carbon Capture

Minister Peng Chi-Ming, head of the Ministry of Environment (MOENV), attended the "Ceremony marking commercial Cooperation with the Taichung Center for Zero-Waste Manufacturing" on 1 November 2024 and signed a "Memorandum of Understanding (MOU) on Carbon Capture and Utilization" with Senior Vice President of Taiwan Semiconductor Manufacturing Company Ltd. (TSMC), Lora Ho. This MOU signifies deep cooperation between TSMC and the MOENV on carbon capture, CO_2 emission reduction, green technical innovation, and working together toward the long-term goal of net-zero emissions. This MOU marks the commitment of TSMC and MOENV to pay attention to global climate change and reduction of greenhouse gas emissions. Their cooperation will focus on the development and demonstration of applied technology, feasibility assessments of general waste treatment facilities, regulatory adaptations under the *Climate Change Response Act*, and promotion of successful experiences.

The "Taichung Center for Zero-Waste Manufacturing", a 4.54-hectare environmental facility within the park aimed at improving the circulation of resources, was created jointly by the Central Taiwan Science Park Bureau and five firms in the park, led by TSMC. It provides facilities to advance waste reduction and a circular economy, with plans to establish facilities to recycle organic solvents used in electronics manufacturing. It is estimated that 86,000 metric tons of organic solvents will be processed every year to recover high-value chemical products.

To demonstrate the development of carbon capture technology, the MOENV is helping government-operated incineration plants to secure third-party certification or apply for recognition of voluntary reduction projects, even though none of these incineration plants is listed as a target designated for carbon fee collection and greenhouse gas reduction. The MOENV is also funding equipment upgrades and improvements at these incinerators. In addition, the ministry is giving guidance on energy saving actions, and replacement of old machinery and equipment. The aim is to maintain steady operations and recover heat from incineration for power generation, to lower the use of fossil fuel. An MOU has been reached to introduce carbon capture technology at government-operated incineration plants. Once realized, the CO_2 captured will be sequestered in liquid form and transported to those who can use carbon or sent to storage facilities in order to maintain carbon neutrality.

Senior Vice President Lora Ho of TSMC expressed her excitement about the MOU. She stressed that TSMC has been working on sustainable corporate operations and this cooperation not only combines technological development and policy promotion but also goes toward fulfilling the responsibility of both the MOENV and TSMC to address climate change. Environment Minister Peng added that the MOENV is the competent authority in Taiwan responsible for promoting environmental protection and sustainable development. It oversees developing and executing Taiwan's environmental protection policies and promoting solid actions to respond to the impacts of climate change.

Meanwhile, the other MOU partner, TSMC, leads the world in semiconductor manufacturing. The company has been very actively engaged in environmental protection and sustainable development and is dedicated to doing its part to reach the national target of net-zero emissions by 2050. This cooperation brings the MOENV and TSMC together to provide robust support for national carbon reduction policies and accelerate the innovation and application of CO_2 reduction technology, to fulfill the visions of net-zero emission by 2050 and circular economy. It is hoped that more firms and businesses will jump on board to create a well-oiled ecosystem of resource circulation.

The MOENV and TSMC signed an MOU to work jointly on developing and using carbon capture technology.

Minister Peng of the MOENV signed a carbon capture and utilization MOU with TSMC.

8. MOENV and L'Etape Work Together for First Time to Hold Environment-friendly Sporting Event

The cycling event, L'Étape, took place on 29 November 2024 at the beautiful Sun Moon Lake in central Taiwan. Minister Peng Chi-Ming of the Ministry of Environment (MOENV) led a group of MOENV colleagues in the 29 km category. He said at the end of his ride that it is never difficult to organize an environmentally friendly competition. For example, the participants may choose to wear clothing made of environmentally friendly materials, and bring their own water bottles instead of drinking bottled water. People interested in the competition may choose to take public transportation to the venue and thereby reduce CO_2 emissions. There is much event organizers can do for the environment at such an event: reusable cups may be provided to reduce single-use water bottles; LED screens can be used to reduce the use of single-use items such as billboard posters or canvases; the event program and other documents may be provided in a digital electronic form to reduce paper printing; trophies and medals can be made of recyclable or environment-friendly materials; and meals may be produced with local ingredients to reduce the CO_2 emissions from the transport of food.

The MOENV has been cooperating with several sporting events since Minister Peng publicly praised the Paris Olympics in June 2024 for adopting environmentally responsible practices to combat climate change, a first in Olympic history. This environmental education campaign addresses the reduction of plastics, low-carbon, net-zero and other issues, and promotes environmentally friendly measures around

the event. The MOENV is collaborating with the event L'Étape held in Taiwan for the first time, following recent events such as HBL, UBL, and the Mizuno Road Race. In addition to providing players with environment-friendly clothing, the MOENV coordinated with the organizer to refrain from using disposable products in favor of disseminating event information electronically to make the event more environmentally friendly. At the same time, Minister Peng once again led his colleagues by participating in person to express his support for this environmental protection event.

Minister Peng indicated that Taiwan has become accustomed to activities such as recycling and garbage sorting, due to the government's promotion and, more importantly, these concepts have been taught in schools where children integrate them into their daily routines. This has shown that the efforts of the environmental protection department are insufficient to make the environment better. It requires support and participation from multiple angles, of government, the private sector and the public, to reach the final goal, one step at a time. Cooperating with the organization of a sporting event is another step for the MOENV outside of its usual comfort zone. To let more people become familiar with and participate in environmental protection activities, the MOENV is hoping to work with all competent authorities and sporting event organizers on issues such as environmental sustainability, net-zero emissions and environmental education, in order to encourage an environmentally friendly ambience at major sporting events in Taiwan and to jointly create a new culture of sports for environmental protection.

Minister Peng of the MOENV and Minister Chen Shih-Kai of the MOTC participated in the event together.

Minister Peng (5th from left) and colleagues at the end of race

9. Taiwan NGOs Partner with Marshall Islands to a Hold COP29 Side Meeting

The "29th Conference of the Parties of the United Nations Framework Convention on Climate Change" (UNFCCC COP29) started on 11 November 2024. The Ministry of Environment (MOENV) COP29 set up a "war room" to keep watch on the conference progress in real time. On 12 November, Taiwan's ITRI held a side meeting with Taiwan's diplomatically, the Marshall Islands, on "Transitioning away from fossil fuel for energy systems: Technological applications and basic market-based policy tools" at the blue zone meeting room of the conference. The International Institute for Sustainable Development (IISD) also attended, as it served as the official international media voice of COP29, giving reports on the progress of the gathering.

Taiwan is not party to the UNFCCC, however the MOENV stated that Taiwan has eleven NGOs registered with the UNFCCC able to participate in the COPs as observers. This year, there were seven side meetings involving Taiwan. On 11 November 2024, the International Cooperation and Development Fund, the Foundation of Taiwan Industry Services and the state of Palau organized a side meeting on "Harmonizing science and nature – Innovative adaptation strategies for a resilient future". Also, on 12 November, ITRI held a side meeting along with the Marshall Islands, featuring a panel with: Dr. Chien-Te Fan of National Tsing Hua University; Mr. Clarence Samuel, Director of Climate Change Directorate, Ministry of Environment, Marshall Islands; Mr. Aayushi Singh, consultant of Perspective Climate Group; Mr. Hiroshi Ono, Executive Director of IGES, and Dr. Tsai Wei-Chen, associate researcher of ITRI. They discussed how to work together across multiple fields toward global climate goals through Article 6 of the "Paris Agreement" and a carbon pricing system. Participants had a heated discussion, and the entire event was reported by the International Institute for Sustainable Development (IISD), the official international media spokesperson for COP29.

The MOENV explained that it set up a COP29 war room assigned with MOENV staff. The progress of the conference and important meetings were broadcast live online to stay on top of the conference progress. The war room went online with Baku at 2:00 p.m. on 13 November, inviting Dr. Chen-An Lien, senior engineer at ITRI, to share what he learned at the COP and side events and the latest developments at the main event. The war room provided domestic media with information on progress at the "World Leaders Climate Action Summit" on 12 November and reported on how representatives from individual countries discussed how best to implement the international reduction system specified in Article 6 of the Paris Agreement, along with a daily summary of important information.

The MOENV has simultaneously held the "COP29 Determination to Escalate Climate Actions Series Forum" in Taiwan since 15th November to encourage public attention on developments related to COP29. Domestic and international experts have been invited in person or online to focus on the main topics of COP29. This series of events will be broadcast live online.

Minister Peng Chi-Ming (right) and Director General Tsai Ling-Yi in front of the COP29 war room

ITRI held a side meeting at the blue zone meeting room of COP29 on 12 November. The debate was lively.

10. Government and CSO Consensus Camp Draws Roadmap for Future Green Development

The Ministry of Environment (MOENV) organized the "Government and CSO (Chief

Sustainability Officers) Consensus Camp" on 23 November 2024, participated in by officials from central and local governments and CSOs of government-owned enterprises. Premier Cho Jung-Tai and Vice Premier Cheng Li-Chiun of the Executive Yuan, Mr. Chang Tun-Han, Deputy Secretary-General to the President, and Mr. Su Chun-Jung, Directorate-General of Personnel Administration, Executive Yuan, were invited to speak on how to establish a "chief sustainability officer" (CSO) within government entities in order to enhance the internal coordination of sustainable development policies and promote the overall net-zero transition in Taiwan.

Premier Cho said in his speech that the "CSO Alliance" was announced in the Executive Yuan's Action 101 Strategy press conference and was established within six months of President Lai Ching-te's inauguration.

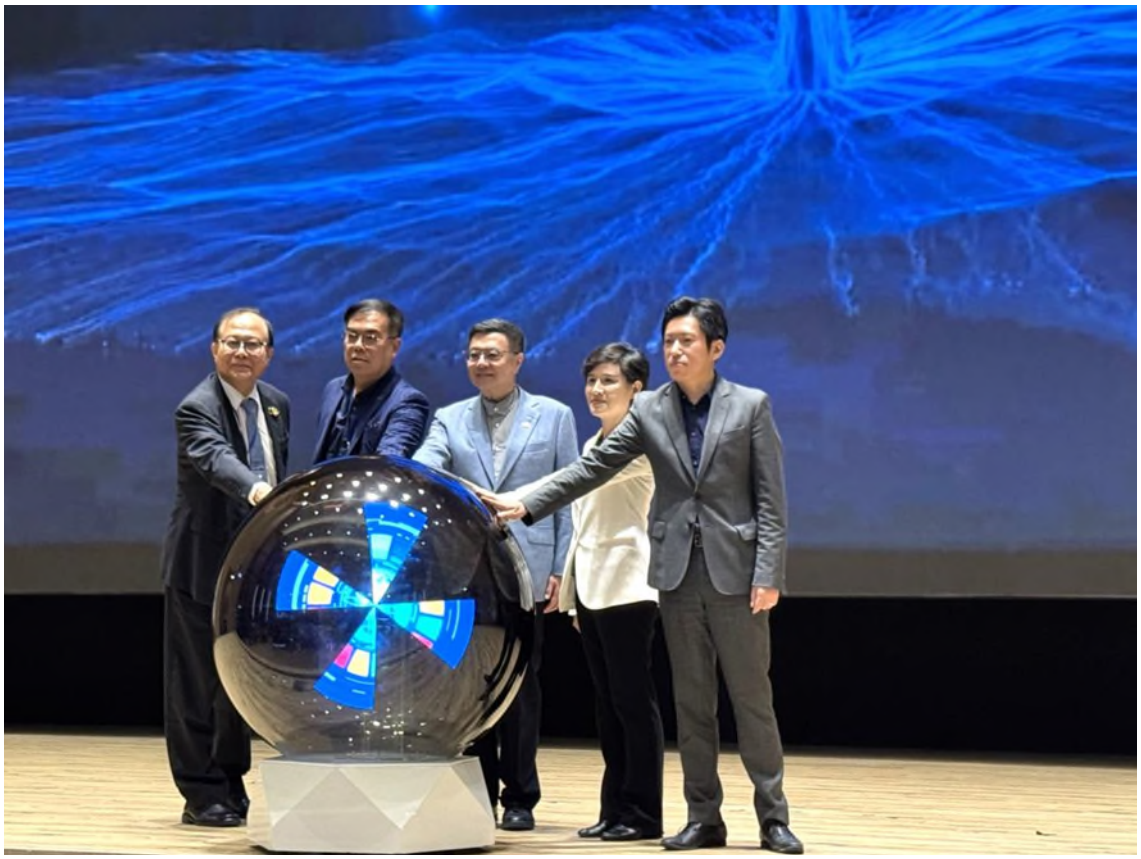
Premier Cho pointed out three priorities for a CSO. First, a CSO must establish goals for each stage, get them done, reach an agreement with society as soon as possible, and discover and develop good talents, as they are the assets of Taiwan and need to be nurtured and developed. Second, CSOs must work together, and involve central agencies, local governments, government-owned enterprises, schools and medical institutes to build upward links, downward rooting and lateral communications. Third, CSOs should innovate for transition, as new ideas, thinking and technology are needed and all departments must have practical CO_2 reduction plans for GHG emissions (including a carbon fee collection system, net-zero technology development, green financing and green procurement, where the green procurement should start from the government and spread across the private sector and then to green industry development to achieve net-zero emissions).

Vice Premier Cheng Li-Chiun added that a CSO has two main duties. On one hand, the CSO has to help Taiwan promote the overall goal of sustainable development and, on the other, to carry out net-zero transition and adaptation actions, by dealing with challenges of climate change through proactive initiatives, introducing innovative thinking, proposing a master plan for homeland adaptation, promoting green industry, a green economy and green-collar talents, and creating a new sustainable development model for generations to come.

Minister Peng Chi-Ming encouraged CSOs by looking at six priorities for the future, namely: to complete an internal carbon inventory step by step; diagnose and execute energy efficiency; replace petrol-fueled vehicles and government vehicles with electric ones; establish building energy efficiency marking a direction toward zero-carbon buildings; increase green procurement to build an ecosystem of reduced carbon emissions, and; revolutionize organizational culture through interactions between government and the private sector. To close, Minister Peng gave the example of the MOENV undergoing a carbon inventory and finding its GHG emissions were approximately 4,084 metric tons of CO_2e for 2023. There are plans for workshops in the future, to teach all agencies about conducting carbon inventories.

Mr. Jesse Chou, CSO of Delta Electronics, and Mr. Su Chun-Jung, Directorate-General of Personnel Administration, shared their practical experience and real-world cases of promoting sustainable development, and provided new ways of thinking for the future sustainable transformation of Taiwan by fostering cooperation between businesses and government, thus setting a solid direction for CSOs on the way to net-zero transitions.

This CSO alliance consensus camp was provided to explore what a CSO should and could do and the direction sustainable development will take by incorporating the sustainable development promotion framework of private businesses. In the future, there will be efforts invested in building a lateral communication platform, developing training programs and empowerment activities, and improving cross-departmental consensus for effective sustainable development.



Premier Cho Jung-Tai (center) and Vice Premier Cheng Li-Chiun (2nd from right) of the Executive Yuan, Mr. Chang Tun-Han, Deputy Secretary-General to the President (1st on right), Minister Peng Chi-Ming of the MOENV (2nd from left) and Mr. Su Chun-Jung, Directorate-General of Personnel Administration, Executive Yuan (1st on left), initiate the CSO alliance platform.

All participants of the government CSO alliance consensus camp

Premier Cho Jung-Tai giving his speech

Vice Premier Cheng Li-Chiun explained the National Project of Hope and sustainability visions

Minister Peng Chi-Ming of the MOENV (right), Mr. Su Chun-Jung, Directorate-General of Personnel Administration, Executive Yuan (left), and Mr. Jesse Chou, CSO of Delta Electronics (center) engaging in a discussion

Minister Peng Chi-Ming of the MOENV, discussing the main objectives of a Chief Sustainability Officer

11. MOENV Signs Agreements with Taiwan Space Agency and National Central University on Satellite and International Monitoring of Air Quality

On 26 November 2024, Minister Peng Chi-Ming of the Ministry of Environment (MOENV) signed an agreement on satellite applications in environmental monitoring and GHG observation with Chairperson Cheng-Wen Wu of the Taiwan Space Agency (TASA), and another on environmental monitoring and international interaction promotion with Dr. Jing-Yang Jou, president of National Central University (NCU). The cooperation agreements, one with TASA to launch Taiwan's atmospheric pollution monitoring satellites and one with NCU to promote the international monitoring network, demonstrates what Taiwan is technically capable of monitoring. It gives Taiwan the ability to monitor pollutant migration and distribution locally and beyond its borders, as well as track changes in GHGs in time and space across Taiwan and the Asia-Pacific. It will allow for early warnings on air pollution plumes and will generate scientific data to help develop strategies. The monitoring data from satellites and international counterparts can be shared with other countries for extensive regional applications, the first such cooperation in the Asia-Pacific region.

The MOENV stated that the cooperation with TASA to launch low-orbit satellites is the first time satellites will be used for environmental monitoring by Taiwan as part of the forward-looking climate change actions outlined in the National Project of Hope. The

European Space Agency's (ESA) Climate Office indicated that satellite monitoring, as a supervision tool, examines CO_2 emissions data and compares them with practical observations to determine CO_2 emission hot spots, and provides countries around the world with vital data for climate policy development. The MOENV has a long-term cooperative relationship with NASA and worked with that agency on developing and launching Taiwan's first geosynchronous satellite to observe atmospheric pollution and GHG emissions. The satellite is programmed to transmit high resolution observation data every ten minutes, which helps improve communications, telemetry, disaster warnings, near-real-time monitoring of atmospheric pollutants and GHG emissions, and changes in CO_2 emissions and air pollution, thus strengthening the resilience of Taiwan's global communications network, and enhancing Taiwan's global competitiveness.

The MOENV pointed out that the NCU's Center for Environmental Monitoring and Technology was founded under the long-term cooperation between the USEPA and the MOENV, originally for the expansion of the Asia-Pacific Mercury Monitoring Network (APMMN). The center has introduced or developed advanced environmental monitoring technology and value-added applications, including integrating observation data collected from satellite telemetry; the Micro-Pulse Lidar Monitoring Network (MPLNET); the Aerosol Robotic Network (AERONET); high-precision aerosol optical parameters and GHG data; aerosol composition data; and other adjustable satellite data to improve satellite observation accuracy. In addition, it has partnered with the UN's Baseline Surface Radiation Network (BSRN), the Canadian Coalition for Good Governance (CCGG) and the Federated Aerosol Network of the National Oceanic and Atmospheric Administration (NOAA), to acquire advanced technologies, expand international relations, and disseminate Taiwan's environmental monitoring achievements.

The MOENV signed an agreement on satellite applications in environmental monitoring and GHG observation with TASA, and another on environmental monitoring and international interaction promotion with NCU.

Representatives from the MOENV, TASA and NCU at the signing ceremonies for cooperation on satellite technology and international monitoring for air quality