



Major Environmental Policies

Jan 2024

1. Amendment and Announcement of *Climate Change Response Act* Enforcement Rules

The MOENV amended the *Enforcement Rules of the Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法施行細則) into the *Enforcement Rules of the Climate Change Response Act* (氣候變遷因應法施行細則) on 29 December 2023. It was done in response to the change of the *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法) into the *Climate Change Response Act* (氣候變遷因應法) on 15 February 2023.

The MOENV explained that 25 articles in total were amended and the amendment was promulgated on 29 December 2023. The key points of this amendment are as follows:

(1) Addition and revision of central and local authorities' responsibilities

Responsibilities for the central competent authorities increased from 13 to 22. The added responsibilities included inspection of results for nationwide carbon reduction and climate change adaptation; review, approval, transfer, and trading of nationwide carbon reduction credits; collection of carbon fees from emission sources; Greenhouse Gas Management Fund (GHG Management Fund) management; and registration, evaluation, and management of carbon emissions from imported goods. Other additions were evaluation, verification, calculation, approval, audit, and inspection of products' carbon footprints; control of greenhouse gases with high global-warming potentials; and evaluation and management concerning the storage of captured carbon dioxide.

The role of local governments was also strengthened as they now have 14 responsibilities instead of three originally. Revisions involved planning and implementation of respective climate change response offices under each municipalities and county and city governments; formulation, revision, planning and implementation of the *Climate Change Adaptation Implementation Programs* (氣候變遷調適執行方案); and inspection and consultation that help emission sources within respective jurisdictions on operation and emission facilities and other relevant data. Other additions included climate change education and promotion in municipalities, counties, and cities; promotion for development of NGOs; and personnel training and seminars. Also, local governments now are responsible for investigation, consultation, research and development of climate change mitigation and carbon reduction within respective jurisdictions; exchanges among cities; audit and inspection of products' carbon footprints; and participation in the of climate change response work of relevant central authorities. All amendments above are an effort to promote local climate change governance.

(2) Specifications on what is mandatory for assessments and documentations for contents in climate change governance-related guidelines, goals, plans and solutions

Goals are established for every five-year regulatory phase according to the *Climate Change Response Act* Article 10. It is clearly stipulated in the enforcement rules that relevant central authorities are to conduct emission trend estimation and scenario analysis, and the propose electricity carbon

emission factors, reduction scenarios, contributions, and estimated costs for each department. With revisions, they are to also reference and adopt NGO's suggestions collected during the preannouncement and accordingly propose growth of electricity demands and evaluate its possible impacts. The process for setting phased goals will be further strengthened by a technical consultation team consisting experts and scholars, which was established based on the *Climate Change Response Act*. Afterwards public hearings will be held to gather opinions.

Reduction action plans for the six major sectors shall take into consideration elements required for national climate actions suggested by UN and international climate agreements. And on 15 August 2023 Premier Chen Chien-Jen instructed to "establish annual goals and evaluate and improve every year in the 35th meeting of the Executive Yuan's National Council for Sustainable Development, Executive Yuan. As a result, "assessment indicators" and "evaluation "have been added to review and improve every year. In addition, in consideration of NGOs' suggestions solicited during preannouncement, the amendments mandated sectorial action plans to include "possible impact assessments". This is in response to the new regulations concerning a just transition under the Climate Change Response Act and aims to take necessary measures as soon as possible for the sustainable development of Taiwan's environment, economy, and society.

(3) Strengthening of regular controls and evaluations as well as reviews for improvement national reduction results

In Taiwan, the release date of national GHG emissions inventory will be advanced from 31 December to 30 June every year to comply with international standards.

Taiwan's responsibility of GHG reduction is shared among six sectors, namely energy, manufacturing, transportation, commercial and residences, agriculture, and environment. Therefore, the action plans' annual results and reviews for further improvements are particularly important for these sectors. It is specified in the enforcement rules that central industry competent authorities are to produce annual reports by 30 September every year and, if failing to meet periodical regulation goals or assessment indicators, improvement measures at the same time. The central competent authorities are required to report the implementation of periodical regulatory goals to the Executive Yuan by 30 November every year. Moreover, local competent authorities' reduction results are to submit reduction results to climate change response office of respective municipalities, counties, and cities by 30 September every year through preparation of annual reduction reports. These reports will be published thereafter.

(4) Inclusion of mitigation goal principles and items under action plans

Based on the Legislative Yuan's Additional Resolutions for the review of the Climate Change Response Act, the enforcement rules added mitigation purposes and basic principles to the act's special chapter on mitigation. The addition states that climate mitigation is to be based on science and adapted according to local conditions with community engagement, strengthen vulnerable populations' resistance against climate impacts, and take sufficient consideration of potential impacts on human rights. Furthermore, it is added that the mitigation programs shall include key elements, such as impacts from climate changes, scenario development, risk assessment, goals, strategies, schedules, budgeting, review, control, and evaluation. These will serve as the basis for the implementation of mitigation programs for governments of all levels.

(5) Specification of information disclosure for public participation

To encourage public participation, the enforcement rules require meeting-related information to be

made public by a given deadline. In addition to public hearings on central sectors' action plans, whose relevant information are to be disclosed ten days before the hearings, procedures of organizing meetings on local reduction programs have been revised, with information made available for the public seven days before. It is also stipulated that climate change-related documents and information of governments of all levels required to be made public under the enforcement rules shall be disclosed all together on website(s) designated by central competent authorities for public inquiries.

2. Revised Regulations Announced for Soil and Groundwater Pollution Remediation Fees

The *Regulations Governing Collection of Soil and Groundwater Pollution Remediation Fees* (土壤及地下水污染整治費收費辦法) were amended and announced by the MOENV. The purpose is to control soil and groundwater pollution by providing those filing remediation fees preferential rates and encouraging businesses to purchase environmental damage liability insurances as an effective measure against possible pollution risks.

The MOENV explained that the *Basic Environment Act* (環境基本法) specifies that polluters shall be responsible for the environmental harms or risks they create. With increasingly strict environmental protection regulations, pollution control equipment or construction projects have become necessities, and enterprises should shoulder their social responsibilities. Therefore, Article 10 of the fee collection regulations was amended to encourage fee payers to purchase liability insurance against environmental damages in exchange for a 5%-discount rate for quarterly remediation fees in the next year. The regulations about refunds for relevant construction projects and insurances with equivalent effect are, on the other hand, deleted.

The MOENV reminded that the amendment would become effective on 1 January 2025. The amendment allows a request for refund to be filed from 1 June to 31 July 2025 for remediation fee payers who will have actually paid for a liability insurance against environmental damages or others with equivalent effect, and invested in new facilities or construction projects that directly prevent soil and groundwater pollutions by 31 December 2024, the amendments allow a request for refund to be filed from 1 June to 31 July 2025. This is in consideration of some fee payers who have invested in pollution prevention and control projects that be completed next year, and to provide sufficient time for enterprises to plan and purchase the said liability insurances.

To simplify the filing procedure for fee payers, in the meantime, the filing procedure is omitted in the amendment for the quarterly remediation fees less than NT\$200. The estimation of remediation fee is available at the Online Filing and Inquiry System for Soil and Groundwater Pollution Remediation Fees (<https://sgwb.moenv.gov.tw/sgwfundo/>) if a fee payer is not sure about the amount.

3. EIA Guidelines Announced to Ensure Proper Disposal of Wastes in Industrial Parks

As an attempt to scrutinize the installation of waste treatment facilities in the environmental

impact assessments of park development activities, the MOENV announced on 28 December 2023 the *Review Guidelines for Establishment of Disposal Facilities for Wastes from Development Activities in Industrial Parks* (環境部審查園區開發行為廢棄物處理設施設置處理原則). The aim is to properly evaluate, in environmental impact assessment (EIA) cases, installation of disposal facilities for wastes generated by development activities in industrial parks. The guidelines will serve as the basis for reviews of waste treatment facilities in EIAs as well as reference for members of the EIA review committee.

The newly promulgated guidelines are based on the *Waste Disposal Act* (廢棄物清理法) Article 32, which mandate the industry competent authority, development unit or management unit of an industrial park or science park to plan and install industrial waste disposal facilities within or outside of the park. The targets are parks and zones where business owners engage in production, manufacturing, technology services and other related businesses, as defined in Article 2 Paragraph 8 of the *Standards for Determining Specific Items and Scope of Environmental Impact Assessments for Development Activities* (環境影響評估細目及範圍認定標準). The guidelines are applied when industrial parks undergo constructions or expansions, modify contents of EIAs, submit analysis reports on the difference of environmental impact, or re-conduct EIAs.

The MOENV's Resource Circulation Administration (RECA) indicates that the guidelines specify that the wastes generated in a park are to be disposed within the park in principle. Based on planning procedures, the development unit will analyze types of industry, type(s) of waste, and installation schedules before submitting analysis results along with EIA documents. Should the development unit find it difficult to install disposal facilities in the park and will have wastes disposed outside of the park, it is to provide assessment basis and justification documents for disposal facilities outside the park. However, a piece of land shall still be reserved for corresponding facility(s) in the park in proportion to the park size.

The guidelines have been announced as EIA evaluation basis and provided to agencies involved so that they will install waste treatment facilities in future park development projects, ensuring proper disposal of wastes generated in the parks.

4. Subsidies Provided to Encourage Innovations of Resource Circulation

Technologies

The Resource Circulation Administration (RECA) under the MOENV has formulated the *Subsidy Guidelines for Resource Circulation Innovations and Research and Development Projects* (補助資源循環創新及研究發展計畫作業要點). Aiming to increase competitive edge of Taiwan's resource circulation industry, *improve* the circulation network, and develop innovative technologies, the RECA hopes to accelerate development of resource circulation industry by encouraging innovative research and development as well as introduction of novice or improvement of existing technologies in the private sector.

The RECA stressed that diversified circulation models and effective improvement of resource utilization can only be achieved by subsidizing all stages of a product, namely from design, use, maintenance, recycling, reuse to disposal. Therefore, targets for subsidization are public and private universities and legal persons. Those eligible for subsidies also include the product manufacturing industry, responsible enterprises of recyclable wastes, and the recycling and disposal industry, public

and private waste clearance and disposal enterprises, reuse facilities, product maintenance or circulation service enterprises, and factories, companies, or legal persons in relevant industries. NT\$100 million has been appropriated for 2024 to subsidize innovative research and development efforts or introduction of the best feasible circulation technology system for more channels of sustainable resource utilization.

Three types of programs are eligible for subsidies under the guidelines. Respectively, they include innovative research and development, focusing on introduction of development of innovative technologies; technical-improvement, aiming to enhance or advance existing technologies; and topic research, trying to solve specific issues. The RECA hopes to see proposals of technical innovations and improvement of existing technologies, and encourages cooperation between industrial and academic sectors to make technical breakthroughs, helping the government facilitate industrial upgrades and achieve the goal of resource circulation with zero waste.

The RECA plans to collect public opinions in 2024 and will late announce application information such as document formats and deadlines. All industrial, academic and research sectors are invited to join hands for the innovations of resource circulation!

5. 2023 Monitoring Results Show Achievements of Air Pollution Controls

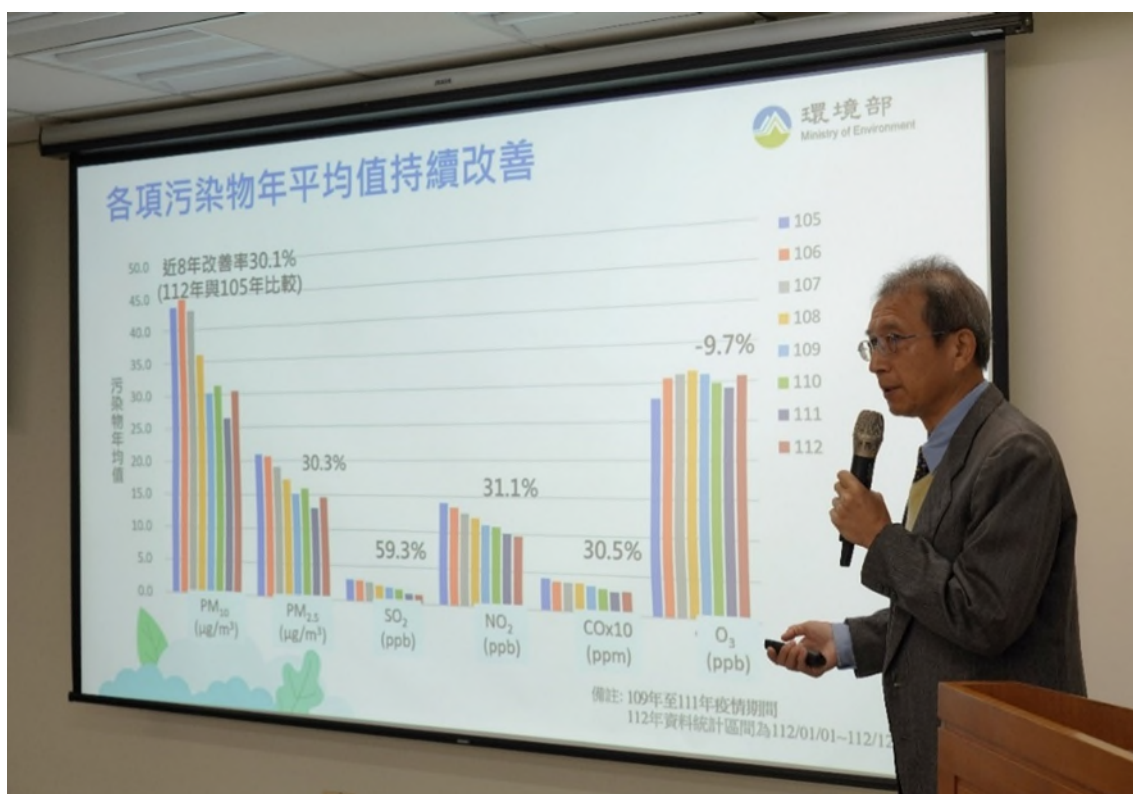
The MOENV produced the air quality monitoring results for the last 8 years and found decreasing trends in the concentration of all pollutants. The percentage of days with poor air quality, with air quality index (AQI) above 100, dropped from 15.09% to 6.35%. The average annual concentration of fine particulate matters (PM_{2.5}) decreased from 20 µg/m³ in 2016 to 13.8 µg/m³ in December 2023, an improvement of more than 30%.

Despite the decreasing trends for pollutants overall, the MOENV points out that the average PM_{2.5} and ozone concentrations in 2023 increased by 1.4 µg/m³ and 1.8ppb, respectively, as opposed to 2022. On the other hand, the numbers of station-days with red alerts, meaning the PM_{2.5} level at 54.5µg/m³, have decreased. This is primarily attributed to low wind speed and low daily precipitation in central and southern Taiwan. The low wind speed and little rain make it difficult for particulate matters to disperse, resulting in regional accumulation of pollutants. When east wind comes and coincides with high temperature and stable meteorological conditions, ozone precursors start to accumulate in the west side of Taiwan, and the photochemical reactions fuels the generation of ozone.

The MOENV has been working with other government agencies to cut down pollutions. Comparing to 2016, the overall pollutant emission from factories and transportation has reduced by 38% and 30%, respectively, which is shown clearly in the air quality improvement. Multiple programs have been launched to cut down pollution since 2016. For example, the cooperation with Ministry of Economic Affairs to target state-owned enterprises, including Taichung Power Plant, Hsinda Power Plant, China Steel and China Ship Building Corp. (CSBC), has led to more than 50% drop in air pollutant emissions. Efforts to encourage replacement of commercial and industrial boilers with one burning natural gas has resulted in the decrease of coal- and heavy oil-burning boilers from 60% to below 20%. The program of replacing old motor vehicles has achieved in phasing out almost 50%, or 70,000, large diesel vehicles, and reducing old motorcycles from 6.98 million to 2.55 million, a decrease by 63%. and the continuous attempt to improve airborne dusts along Jhuoshui River has

seen an improvement rate of over 90%, lowering exposed regions by 77% and number of days with airborne dust incidents from 59 in 2017 to 5 in 2023, an improvement rate of more than 90%.

The MOENV further pointed out that the cooperation between central and local governments has produced initial improvement for the air quality in Taiwan. However, there are still regional and seasonal issues of poor air quality, and the indicator pollutant, which was PM2.5, is now ozone. The second phase of the Air Pollution Control Program (2024 to 2027), therefore, will be focusing on precise controls with two new goals. One is, on a national scale, an 80% decrease from 2018 in the number of station-days with eight-hour average ozone concentration reaching the red-alert level, and another one is PM2.5 concentration at or below 15 µg/m³ in central and southern Taiwan. The second phase will be further coupled with the national policy of net-zero emissions and carry out measures to cut down pollutions and emissions, continuing to improve Taiwan’s air quality and protecting citizens’ health.



Department of Monitoring and Information explains changes in average annual pollutant concentrations

6. Effluent Standards for Ammonia Nitrogen - Second Phase, Effective from January 1, 2024

High-concentration ammonia-nitrogen wastewater, once discharged to water bodies, is toxic to living organisms and compromises quality of water bodies by consuming dissolved oxygen. The *Effluent Standards* (放流水標準) were amended on 25 December 2017, adding stricter standards in stages for industries like metal finishing, electroplating and tanning. The first phase came into force on 1 January 2021 and resulted in reducing emissions by approximately 73% and improving

river basin water quality by 29%. The second phase is in effect on 1 January 2024 and it is estimated that 1,587 enterprises will be affected.

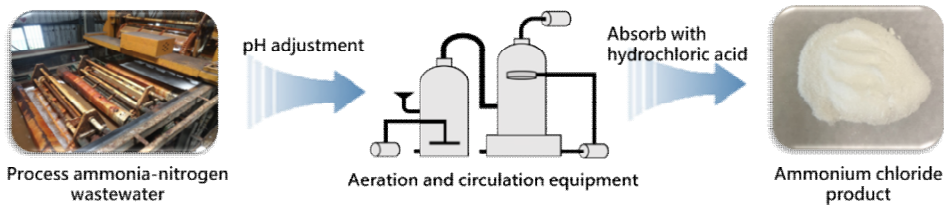
The MOENV stated that enterprises have started trying to divert discharge of wastewater containing high ammonia-nitrogen concentration ever since the addition of controls on ammonia-nitrogen in the *Effluent Standards*. Turning away from conventional wastewater treatment, they adopted resource circulation technology, transforming nitrogen-containing wastewater into valuable products. For example, enterprises have been reported to process their ammonia-nitrogen wastewater from metal finishing and electroplating via stripping, crystallization and purification, and the final product is solidified ammonium chloride that can be put back to the manufacturing end. Some domestic semiconductor manufacturers have their ammonia-nitrogen wastewater subject to membrane technology (deaeration membrane), absorption, crystallization and drying to produce crystalline ammonium sulfate or valuable aqueous ammonia for reuse.

The MOENV further indicated that these ammonia-nitrogen reduction achievements are shown in the test reports submitted by enterprises on wastewater discharge. Back in 2020 before the revised standards were in effect, emission of ammonia-nitrogen reached 13,279 tons in total, and it dropped to 3,600 tons as of 2023. The total reduction is 9,679 tons for a reduction rate of 73%. In terms of river water quality, Tahan Stream can be used as an example as this is where more enterprises affected by the revised *Effluent Standards* discharge their wastewaters. Its ammonia-nitrogen concentration was 1.78 mg/L in average in 2020 and dropped to 1.27 mg/L in 2023, a roughly 29% improvement of ammonia-nitrogen concentration within the water basin.

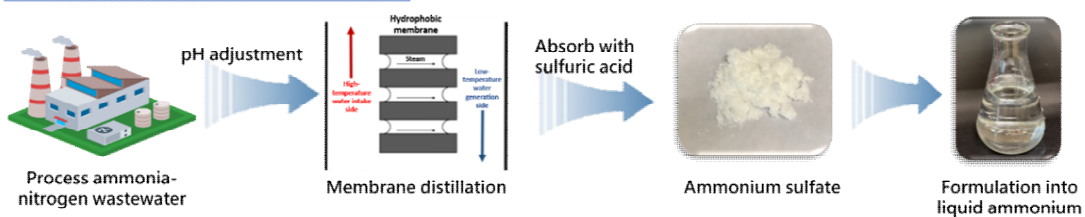


Ammonia wastewater recovery treatment

Example 1 Recover by stripping and circulation



Example 2 Membrane distillation

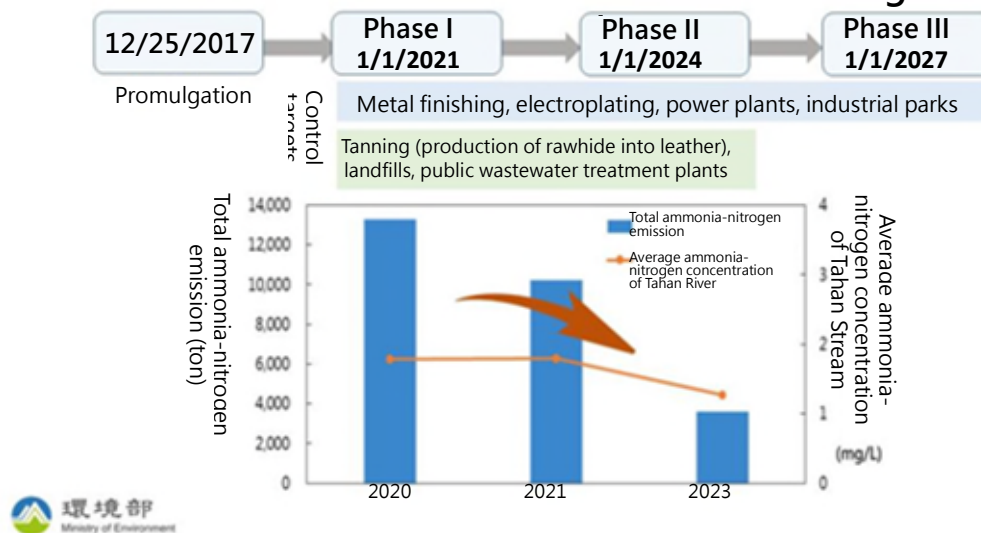


Ammonia-nitrogen wastewater disposal process

The MOENV conducted research after the *Effluent Standards* were revised to keep track on enterprises' process of pollution reduction and improvement. The result shows that most of the enterprises had done the improvement work with the end of buffer period; still, a few failed to meet the stricter standards of the second phase in 2024. Once the incompliance is found by the local competent authority, there will be a fine between NT\$60,000 and 2 million according to the Water Pollution Control Act (水污染防治法) Article 40. With the upcoming trend of net-zero emissions, the MOENV suggests enterprises follow successful examples of their fellow colleagues, adopting

wastewater resource circulation and recycling valuable resources are recycled before properly treating remaining wastewater to cut down pollutant emissions and ensure that the quality of effluence meets the regulatory standards.

Schedule and achievements of Effluent Standards amendment for ammonia-nitrogen



Schedule and achievements of ammonia-nitrogen control in the revised *Effluent Standards*

7. Mobile Air Quality Lab Launched as A New Milestone for Environmental Testing Technology

The National Environmental Research Academy (NERA) revealed a major technical breakthrough in 2023 with successful in-the-field performances of real-time online analysis on heavy metal components in airborne particulate matters, which previously could only be done in the laboratory. This advanced mobile laboratory is equipped with sophisticated instruments for testing, for example, mass concentration in fine particulate matters (PM_{2.5}), organic/element carbon, positive and negative ions, and metal elements. Particularly, the gas exchange device-inductively coupled plasma-mass spectrometer (GED-ICP-MS), which was used in laboratory, is now integrated in the mobile one. This advanced equipment introduces air samples directly into analysis instrument and analyzes in-situ trace heavy metals in PM_{2.5}. This technology improves testing efficiency very effectively and hence has set a new milestone for environmental testing technology.

The MOENV expressed that the overall concentration of fine particulate matters has shown gradual decrease over the years in Taiwan, all thanks to the hard work of environmental protection units of all levels. In Douliu, Yunlin, the average PM_{2.5} concentration in 2022 was 18.9 µg/m³, a significant improvement by almost 50% as opposed to 34 µg/m³ in 2003, but still slightly higher than the average concentration of other counties and cities. To find out the cause of local PM_{2.5} pollution and devise a more precise air pollution control strategy, the NERA deployed the new mobile laboratory in Douliu, Yunlin, to conduct tests and studies of air pollutant in the field and provide scientific evidence for MOENV to formulate air pollution control strategy.

The MOENV emphasized that the successful application of this advanced technology demonstrates the NERA's dedication and efforts in the field of environmental governance and provides a solid

foundation of scientific research and data analysis for the government's work in improving air quality and protecting people's health. Looking at the future, the NERA is committed to environmental governance research and becoming the think tank for various environmental challenges, providing all a healthy and clean environment.



Unveiling ceremony of the mobile laboratory

8. New Options Added to Offset Increased Air Pollutions from EIA Developers

The MOENV announced the amended *Principles for Reviewing Air Pollutant Emission Offsets of Development Activities* (審查開發行為空氣污染物排放量增量抵換處理原則) on 12 December 2023. The purpose is to accelerate reduction of air pollution caused by old vehicles and motorcycles and burning joss paper as well as introduce private sources to offshore islands to aid in air pollution reduction. The revision has added three sources for offsets, namely installation of environment-friendly joss paper burners, assistance in air pollution reduction on offshore islands, and replacement of old motor vehicles of ten years or older. Development units are encouraged to flexibly offset increased air pollutions generated by their development activities with the above three sources and, therefore, mitigate impacts on the environment.

The offset sources under the existing offset principles mainly target stationary, mobile, and fugitive pollution sources, allowing developers undergoing EIAs to offset increased pollutions by working with private and public venues to implement an offset mechanism. Among the major industrial park development projects having been reviewed by the MOENV from 2021 to date, 4,365 tons of air pollution have been offset by offset measures planned out by developers, which is expected to lessen impacts on air quality brought by development activities under EIAs. More diverse options

have been set in place for development units to offset increase of air pollution with the following factors taken into consideration. First, burning joss paper outdoors causes air pollution and is prone to public complaints, so installation of pollution control facilities for environment-friendly joss paper burners is included as an offset option. Another addition is that developers can offset air pollution caused by their activities in the main island by carrying out air pollution reduction measures in offshore islands may serve as a source to offset the development behaviors in Taiwan. Finally, previously replacement of 15-year-old or older vehicles was eligible for offset, and revisions have included more old vehicles by lowering replacement age to ten years and older and adjusted the previous basis calculating reduction benefits from old vehicle replacement.

Furthermore, after this amendment developers that are legal persons or organizations are required to carry out offset measures before being approved by their EIA reviews. This is to create more flexibility for development units in their offset efforts. However, the obtained benefits of air pollution reductions must be offset within ten years, so the MOENV reminds all developers to get familiar with the new time limit under the revisions to avoid expiration of their offset efforts.

9. Measures Intensified to Strengthen SRF Manufacturing and Use Management

EU, Japan, and other advanced countries have started conversion of combustible wastes into solid recovered fuels (SRFs), following the international trend of lowering use of coals. Considering such trend, Taiwan has also set up SRF management systems and standards, with requirements in place for sourcing of SRF materials, manufacturing procedures, quality regulations, end-of-user equipment, and air pollution controls. The MOENV will keep improving the review and management system for SRF manufacturing and use, focusing on product quality and compliance with air pollution control standards, conducting audits and consultation, and strengthening overall operation management and flow tracking. Once evidence proves that an enterprise is producing pollutions under the disguise of SRFs, it will be prosecuted according to the *Waste Disposal Act* (廢棄物清理法) without mercy. All enterprises are warned not to take any chance and breach any law.

The MOENV's Resource Circulation Administration (RECA) indicates that SRF is a fuel made of non-hazardous and combustible wastes using equipment complying with relevant regulations. It is a good replacement for coal with carbon reduction benefits. The Administration has been promoting the conversion of wastes into fuel since 2019. The *Guidelines and Quality Standards for Solid Recovered Fuel Manufacturing Technology* (固體再生燃料製造技術指引與品質規範), established in 2020, cover sourcing of wastes, necessary facilities in manufacturing plants, quality management, types of end-of-user facilities and pollution control facilities in addition to SRF quality standards. With this the environmental authorities can conduct reviews and approval procedures and future audits and management accordingly. Furthermore, the existing SRF-burning equipment, with good air pollution control equipment, can lower dioxin emissions by breaking down dioxins with extreme heat.

Given the existing SRF quality regulations and management, in 2023 the RECA thoroughly examined paper documents of all SRF factories in Taiwan and conducted 66 onsite visits with local environmental authorities. However, it was found that factories are equipped with different technological capacities, which the RECA will take actions to enhance qualities. There will be a 3-stage review for new factories (document evaluation, trial run and onsite inspection). The RECA

Administration will establish a central-local joint review mechanism, in which a central technical team is assembled to help local governments with the review to improve review quality and verify new factories' ability of SRF production. For existing factories, an audit and consultation program will be carried out to ensure manufacturing quality by examining whether material sourcing, manufacturing and end use comply with relevant regulations and requires implementation of SRF sampling and testing. Those found with any non-compliance are required to improve by the given deadline, or have their waste disposal plans revoked or cancelled according to the Waste Disposal Act.

There are already emission control standards for SRF-using facilities at the moment. For instance, air pollution emissions of power facilities that generate electricity as their main purpose shall comply with the Air Pollutant Emissions Standards for Power Facilities (電力設施空氣污染物排放標準), and those of typical boilers the Air Pollutant Emissions Standards for Boilers (鍋爐空氣污染物排放標準). The regulations concerning dioxin and heavy metal emissions for incinerators are applicable to those using SRFs. The Department of Atmospheric Environment under the MOENV preannounced draft amendments of the Fuel Used in Stationary Pollution Sources to Comply with Co-firing Ratios and Component Standards (公私場所固定污染源應符合混燒比例及成分標準之燃料), the Co-firing Ratios and Component Standards for Fuel Used in Stationary Pollution Sources (公私場所固定污染源燃料混燒比例及成分標準) and the Air Pollutant Emissions Standards for Boilers in July 2023. In the revisions there are new specifications for the types and sizes of SRF-burning facilities and requirements of air pollution control equipment to be installed, as to strictly control air pollutant emissions.

The MOENV will deal practically with issues found in pushing SRF policies forward, incorporate opinions from all sides for future amendments, intensify management efforts, and implement audits and consultation to achieve the goal of converting wastes into energy.

10. MOENV Officially Launches Environmental Education Discovery Center Online

The Environmental Education Discovery Center (<https://eeis.moenv.gov.tw/front/>) is now officially launched online, showcasing all the MOENV's achievements on environmental education and resources collected over the years. The website is designed to be visited in 3 ways and caters to different groups. The MOENV Minister Shieu Fuh-Sheng made a film to invite everyone to explore in the hope that citizens will help promote environmental education through visiting the website and become more active in environmental protection.

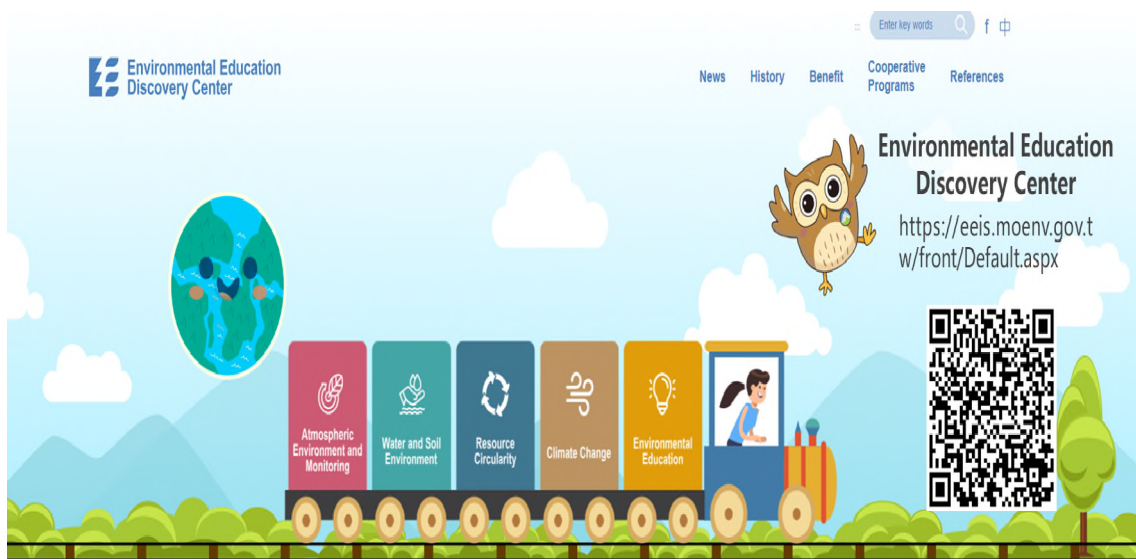
The Environmental Education Discovery Center has been set up to provide high-quality environmental education resource and diverse services. Integrating the MOENV's major works and various environmental topics, the website compiles the MOENV's fruitful achievements in the field of environmental education over the years, and incorporates the concept of electronic library and designs targeting different groups. People may explore the contents in three ways, which are environmental topics (atmospheric environment and monitoring, water and soil environment, climate change and environmental education), use scenarios (environmental lectures, self-learning, participation in activities and exchanges via competitions), and county and city maps. Different contents can also search based on visitor identities (categorized by ages or social groups) so as all visitors can obtain needed resources and widen their base of environmental knowledge and capabilities.

With environmental topics as an example, search results are displayed based on the age and social

group selected by visitors; the information provided is easy to understand for the age of elementary school children and becomes more in-depth and professional for college students. For use scenarios, parents may choose podcasts and illustration books easy to learn for children and discover environmental education activities that they can enjoy with their children. There are ideas available on competitive activities that school teachers can participate with their students, as well as teaching materials or programs for classroom lectures. Moreover, the county and city maps on the website provides an intuitive way to allow visitors to click on a place and examine available local environmental education resources as well as relevant results. All people are welcomed to keep checking out the Environmental Education Discovery Center for updated information.



Department of Environmental Protection presents the Environmental Education Discovery Center



Environmental Education Discovery Center homepage and QR-code link

11. MOENV Demonstrates Taiwan's Determination to Combat Climate Change and Achieve Net Zero in COP28

The two-week long 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (FCCC) commenced in Dubai, United Arab Emirates, on 30 November 2023. Despite not being a UN member, Taiwan still registered for participation as an NGO observer as usual. Minister Shieu Fuh-Sheng of the MOENV led a delegation consisting of representatives from all government agencies to Dubai, showing Taiwan's commitment to being part of the international community in the spirit of being professional, pragmatic, and contributive". This action displayed Taiwan's participation in climate convention activities as well as pledge of international climate actions. Minister Shieu also expresses to Taiwan's friends in the world Taiwan's determination to jointly pursue the goal of 1.5°C.

Participants from all sectors of Taiwan were present inside and outside the COP28 venue. The diverse exhibitions, presentations, workshops, dialogues, and speeches spoke to the world Taiwan's advantages and strengths in the development of green technologies, which have been applied in disaster relief, disaster prevention, environmental protection, public health, green energy, and other related fields. This is the evidence to demonstrate how Taiwan fulfills the role of global citizen and is willing to share with the international community.

In 2023 FCCC conducted its first global stock take. Many countries have made net-zero emissions as their goal, but it is clearly stated in the Emissions Gap Report 2023, published by UN Environmental Programme (UNEP) in November 2023, that these joints efforts are still insufficient. The world needs to work harder to accelerate energy transition and fight against climate change. In recent years Taiwan has started taking climate-related actions in multiple aspects, such as laws, systems, and policies. Incorporating the goal of net-zero emissions by into laws, Taiwan has facilitated the carbon pricing system, formulated the 2050 Net-Zero Emission Pathway (2050 淨零排放路徑藍圖) and the 12 Key Strategic Action Plans for net-zero transition" (淨零轉型 12 項關鍵戰略行動計畫). Other actions include establishment of National Climate Change Adaptation Action Plan (國家氣候變遷調適行動計畫), which integrates central and local efforts, building up basic overall capacities responding to climate change challenges, and enhance public awareness on climate issues. During COP 28 Minister Shieu and delegation members interacted with international participants inside and outside the venue. The world was impressed and spoke highly about Taiwan's efforts in net-zero transition in energy, industry, lifestyle, and social aspects and the vitality of Taiwan's private and public sectors in climate actions.

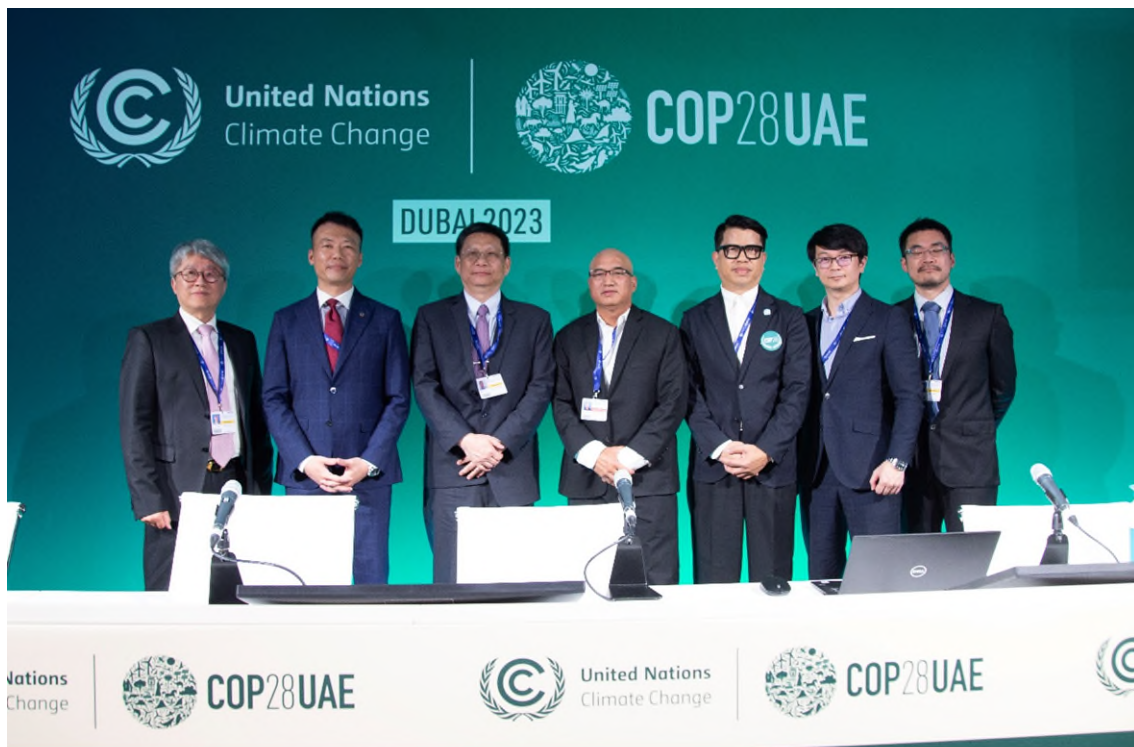
Minister Shieu said that, as the FCCC focuses on common but differentiated responsibilities, Taiwan, as a country ready for responsibility, should be included in climate conversations. Facing climate change, Taiwan, and the world all aim for net-zero emissions. Equipped with green technology and strong technological strengths and in constant search of practical opportunities to make contributions, Taiwan is a force for good and could be an important solution for the world against threats of climate change and in supply chain restructuring, as well as a reliable, safe and trustworthy partner.



Minister Shiu and delegates show Taiwan's determination to jointly take "climate actions" with the world



Minister Shiu has bilateral talk with Saint Lucia



Event of International Technology Research Institute in COP28 venue

12. Join Hands with United States Environmental Protection Agency and Ministry of Natural Resources and Environment of Thailand for Exchanges of Soil and Groundwater Technologies

On 26 November 2023, Deputy Director General Liu Jui-Hsiang of the MOENV's Environmental Management Administration (EMA) led a delegation of industrial, governmental, and academic representatives of Taiwan to attend a series of technical exchanges in Thailand. This 6-day visit was also accompanied by experts from the USEPA. The delegation made multiple major accomplishments during the stay, having attended a technological exchange forum among Taiwan, USA, and Thailand, taken part in onsite inspections to two pollution sites, and visited Taipei Economic and Cultural Office in Thailand. Delegates also witnessed the signing of a strategic alliance memorandum between industry organizations as well as an academic cooperation memorandum between two universities.

The 2023 Taiwan-US-Thailand Soil and Groundwater Environmental Technology Cooperation Forum was organized by the MOENV and USEPA to exchange on technological and legal aspects concerning soil and groundwater issues. With many officials from Thailand's competent authorities were invited, there were more than 100 participants combined in online and physical presence, sharing experiences in site management, pollution investigation and remediation technologies concerning soil and groundwater pollution sites. All continued to tighten close partnership on the base of mutual benefits and common growth while exploring business opportunities for oversea market development. In his opening speech, Deputy Director General Liu spoke of the assistance provided on contaminated site management and technologies through face-to-face exchanges and onsite inspections. He hoped to deepen the cooperation between Thailand and Taiwan by understanding the status and needs of Thailand's pollution remediation and development of its environmental

industry.

Accompanied by officials from Ministry of Industrial Works, Ministry of Natural Resources and Environment of Thailand and residents, Taiwan's delegation visited two contaminated sites. With Thailand's Bureau of Groundwater Resource, they also used rapid test kits to obtain multiple groundwater quality parameters and performed landscape survey with drones to help determine any unusual changes. Having years of practical experiences, Taiwan's delegates were able to make suggestions and propose future measures for individual stages in consideration of the sites' current situation in the conclusion meeting.

The Taiwan Soil and Groundwater Protection Association and Thai-Taiwan Business Association signed a memorandum for strategic alliance under the EMA's witness, which will help facilitate cooperation for environmental protection in Thailand and improve service for local Taiwan-based businesses. Apart from this industrial cooperation, the EMA also saw the memorandum signed by Collage of Engineering of Chung Yuan Christian University and Faculty of Engineering of Chulalongkorn University for future cooperation. Afterwards the EMA invited students of Chulalongkorn University to attend the soil and groundwater technology exchange forum as to nurture talents of environmental protection in countries with the Association of Southeast Asian Nations (ASEAN).

Taiwan continues to play a leading and important role in the field of soil and groundwater in Asian-Pacific region. Thanks to the joint efforts of industry, governmental and academic sectors, this forum has set a solid foundation for collaboration among Taiwan, USA and Thailand and facilitated multiple cooperation opportunities. This visit has established a brand-new milestone for the international cooperation and interactions for the science of soil and groundwater.



Deputy Director General Liu Jui-Hsiang, Acting Director of Thailand Pollution Control Department, and expert from USEPA (from left to right)