Major Environmental Policies

August 2025

1. MOENV Announces Carbon Inventory Guidelines for 4 Industries

MOENV announced on July 14 the greenhouse gas (GHG) inventory guidelines for four categories, the service industry, transportation, hospitals and colleges/universities. The guidelines are designed to assist those added to the expanded list of mandatory inventory targets announced for 2025. A series of meetings is expected to be organized in mid-July in collaboration with the central competent authorities. The inventory reporting system is scheduled for trial in September to ensure that all enterprises listed for control can complete the GHG inventory for 2025 by 30 April 2026.

On 4 March 2025, the MOENV announced the "*Enterprise Emission Source Subject to Inventory and Reporting of Greenhouse Gas Emission(事業應盤查登錄溫室氣體排放量之排放源)*", mandating industries with high-energy-consuming electricity, gas, or other fossil fuels, such as the service industry, transportation, medical institutions, universities, and the manufacturing industry, to conduct GHG inventory and reporting. To assist these enterprises, whose estimated GHG emissions fall between 10,000 and 25,000 metric tons, inventory guidelines are set specifically for various industries, and simple calculation tools are also provided at the Mandatory Greenhouse Gas Reporting System. This tool, combined with the operation manual, allows enterprises to quickly estimate 80% to 90% of their GHG emissions based on their own annual electricity and fuel consumption. In addition, MOENV has reached an agreement with TaiPower Company that it can provide enterprises with direct access to power consumption via the Mandatory Reporting System through the Mandatory Reporting System, if they submit authorization documents.

MOENV formulated guidelines specifically for these four categories, considering their distinct characteristics. For example, service enterprises aim often to expand by opening many branch stores: transportation enterprises rely on gas- and diesel-fueled fleets and focus on station operation, hospitals have high electricity consumption and possibly use special GHGs in anesthetics and medical procedures, and colleges/ universities run many laboratories for teaching and research. During the guideline formulation, opinions from various fields were gathered. With the service industry, templates are provided to department stores, hotels, convenience stores, supermarkets, wholesale stores, information services and telecommunications. Meetings of corporate inventory capacity coaching will be organized to explain in detail relevant regulations of the inventory methods, inventory guidelines, and system operation, which will effectively improve enterprise personnel's inventory capabilities and ensure that enterprises under the expanded control successfully complete inventory and reporting.

Carbon emission inventory is the cornerstone for carbon reduction as well as the foundation for implementing emission management and reduction measures. With the expanded list of targets subject to mandatory GHG inventory, the MOENV adopted four principles: no trouble, no need for outsourcing, no verification, and no collection of carbon fees. The complete inventory guidelines announced this time are available for download at the Mandatory Greenhouse Gas Reporting System. Moreover, the competent authorities for individual industries will provide guidance and

update the information on the Mandatory System regularly.

Presentation for assistance for GHG emission inventory

MOENV promulgates 4 categories of inventory guidelines

2. MOENV Announces Regulations for Climate Change Risk Assessment

The MOENV released the "*Regulations for Climate Change Risk Assessment (氣候變遷風險評估作業準則)*" according to Article 18 of the "*Climate Change Response Act (氣候變遷因應法)*" to improve the climate adaptation capabilities of governments at all levels, in response to extreme weather events, and strengthen climate risk management. The regulations will serve as the basis for governments at all levels to carry out adaptation policies and action plans and establish a consistent climate risk assessment procedure.

The MOENV released the draft "*Regulations for Climate Change Risk Assessment*" for public feedback on April 9, 2025. Following workshops for discussion and revisions, and official promulgation was made on July 16, 2025, after thorough discissions and the integration of public opinions.

The MOENV pointed out that the regulations will help establish consistent procedures and operational guidelines for government departments' efforts in climate change risk assessment and adaptation solutions. Governments at all levels shall use the latest scientific reports on climate change to conduct systematic risk assessments based on these regulations when developing and implementing climate change adaptation programs and strategies. Additionally, they are to develop adaptation plans for fields susceptible to climate change impacts and local adaptation action plans to minimize climate impacts accordingly. Drawing on domestic and international experiences, a systematic framework has been designed, covering assessment principles, analysis methods, adaptation implementation, and a review and revision mechanism. Key points include:

I. Clearly define assessment principles: Climate change risk assessment shall cover the scope definition, status, and future risk analysis, and incorporate levels of hazard, exposure, and vulnerability.

II. Enhance adaptation and decision-making mechanisms: Governments at all levels shall formulate adaptation options based on climate change risk assessment results and evaluate their feasibility and outcomes.

III. Facilitate cross-departmental cooperation and public participation: The government, private sector, and civil society are encouraged to participate in climate risk assessment and adaptation decision-making, mainstream climate adaptation policies, and facilitate social inclusion.

IV. Establish a review and revision system on a rolling basis: Adaptation plans are reviewed and revised in a timely manner based on the latest climate science reports and domestic and international development trends to enhance effectiveness and replicability of adaptation measures.

The MOENV mentioned that the National Development Council held a special task force meeting on Planning and Promotion of Adaptation Strategy to Climate Change in Taiwan and its Action Plans on 14 May 2025 to promote the new *"National Climate Change Adaptation Action Plan (2027-2030) (國家氣候變遷調適行動計畫)"*and to adjust areas under the Action Plan that are prone to climate change impacts. In addition to the five existing major areas, life-sustaining infrastructure, water resources, land use, energy supply and industries, and health, the Action Plan has been updated. "Oceans and coasts," formerly "coasts and oceans," is now managed by the Ocean Affairs Council.

Meanwhile, "agricultural production and biodiversity" has been split into "agricultural production" and "ecosystems," bringing the total number of areas to eight.

In accordance with the *Climate Change Response Act*, all ministries will define the scope of assessment for their respective sectors that are vulnerable to climate change impacts. They will do this based on the latest climate science reports and the provisions of these guidelines and will initiate climate change risk assessments following established procedures. The MOENV will help the ministries introduce risk assessment procedures and enhance their capabilities in climate adaptation. Starting in August, the MOENV will collaborate with the National Science and Technology Center for Disaster Reduction to organize workshops on climate risk assessments and applications. Experts from various adaptation sectors will be invited in these workshops to integrate and promote experiences and exchange research results, facilitate cross-departmental learning and cooperation, support ministries in strengthening their climate adaptation capabilities, and standardize climate risk assessments and operational procedures. The aim is to gradually build a forward-looking and resilient adaptation governance system and to integrate and enhance Taiwan's long-term adaptation capabilities to address climate risks.

3. HFC Imports and Exports Without Permits Subject to NT$100,000 to NT$1 million Starting July

To align with the Kigali Amendment to the Montreal Protocol, which places hydrofluorocarbons (HFCs)-a family of substances with high global warming potential-under control, the MOENV promulgated the *"Management Regulations for Hydrofluorocarbons (氫氟碳化物管理辦法)"* on February 25 2025. The regulations specified the national HFC consumption and will ban the import and export of HFCs without a permit starting on July 1, 2025. Businesses that use or supply HFCs are urged to obtain the required permits before importing or exporting, or they may face a penalty.

The MOENV indicates that HFCs are commonly used in Taiwan as refrigerants for refrigeration and air conditioning, as fire-extinguishing agents, and in electronics manufacturing processes. Because of HFCs' high global warming potential (GWP) and significant impacts on climate change, the Kigali Amendment, which was approved at the 28th Conference of the Parties to the Montreal Protocol, lists HFCs as controlled substances. It stipulated that all signing parties should gradually reduce HFC consumption (i.e., manufacturing + import - export) in phases. On 25 February 2025, Taiwan has announced the "Prohibited or Restricted Types of Hydrofluorocarbons for Manufacture, Import, Export, Sale, Use or Emission," and promulgated the *Management Regulations for Hydrofluorocarbons* (referred to as the regulations hereinafter), clearly defining Taiwan's HFC consumption baseline, reduction rates and reduction schedules for each phase among all relevant control measures.

With the promulgation of the regulations and relevant control measures, the MOENV urges enterprises to heed the following to avoid violating the regulations and fines of NT$100,000 and NT$1 million under Article 52 of the *Climate Change Response Act*:

I. Starting July 1, 2025, HFCs may only be imported or exported only with a permit, and from or to countries or regions specified by the Montreal Protocol.

II. Businesses must first qualify for and obtain an HFC allocation and obtain allocation quantities

before applying to MOENV for permits, either on their own or by commissioning suppliers, for imports or exports. The goods must be imported or exported within the approved period.

III. Businesses」 qualified for allocation or provided with allocated quantities shall report their operations of the previous quarter by the end of January, April, July, and October. Users with an allocated quota are prohibited from selling or distributing of HFCs. Suppliers with an allocated quota may transfer their quotas to other suppliers only with MOENV's approval.

IV. Businesses with HFC needs may visit MOENV's HFCs Reporting System for a list of suppliers who have obtained allocation approvals from MOENV or may apply to MOENV for allocation approval and allocated quantities for the next year by the end of every July in accordance with Article 6 of the regulations. Upon approval, they may then apply for import and export permits.

4. MOENV Sets up Subsidies for Post-Disaster Asbestos Waste Disposal

In response to multiple buildings damaged in Chiayi City, Chiayi County and Tainan City due to typhoon Danas, MOENV, after visiting the affected areas twice on July 18 and July 19, 2025, approved a fund of NT$24.5 million for the three counties and cities on July 21. It ask local governments to help residents remove asbestos-containing waste to the designated storage site. Local governments estimated that NT$780 million is needed alone to dispose of asbestos-containing wastes, so the Executive Yuan decided on 29 July to accelerate recovery by helping with removal of asbestos-containing wastes generated at residences, livestock farms, agricultural facilities and other locations damaged by the typhoon. To ensure safety of the public and removal personnel, the Ministry of Labor (MOL) and the MOENV promulgated the *Guidelines for Hazard Prevention for Post-Disaster Removal and Clearance of Asbestos-Containing Corrugated Roofing Sheets* (災後石綿屋瓦浪板拆除清理作業危害預防處理原則) and *Guidelines for Removal and Disposal of Asbestos-Containing Wastes after Natural Disasters* (天然災害後石綿建材廢棄物清除處理指引) on 25 and 30 July, respectively, as reference for protection.

The MOENV indicated that asbestos was widely used particularly as roofing material in the 1970s and 1980s for its fire retardance, thermal insulation and abrasion resistance. Later studies revealed that asbestos fibers are harmful to human health if inhaled and therefore currently banned for use and import. There will be no fugitive asbestos fibers If the asbestos building materials are structurally intact and not damaged or demolished in any way. It will be safe with low risk to human health. The Chemicals Administration, MOENV has found approximately 240,000 buildings nationwide with asbestos on their roofs using remote sensing since 2020. A subsidy of NT$1.6 billion in total is being appropriated from 2023 to 2027 for local governments to help with asbestos waste disposal. With NT$860 million allocated so far, local governments have finished informing homeowners of all the listed buildings, conducting field investigation on 43,000 properties, and disposing of 14,000 metric tons of asbestos waste. It is estimated that Danas newly left behind additional 15,600 metric tons of asbestos waste. As of the end of June 2025, there are still 645,000 metric tons in landfill capacity, enough to meet post-disaster disposal needs.

For asbestos-containing material management and control, the MOENV has looked to experience in Japan and the Netherlands, which reduce health and environmental risks by allowing natural phase-out during renovations of old buildings and then providing subsidies for proper disposal, instead of mandating complete demolition within a certain period. Such measures are continuously carried out

with necessary consideration regarding homeowners' willingness, rebuilding needs, and demolition capacity. Furthermore, MOENV funded research and development of thermal and chemical disposal technologies in 2023-2024 to expand disposal technologies and capacity beyond landfill.

Regarding asbestos management, MOENV has been working with the MOL, the Ministry of the Interior (MOI), and the Ministry of Health and Welfare to establish an online asbestos information platform, providing information on promotional materials, regulations, consultation, and application documents for the public, disposal personnel, companies, and enterprise institutions. For the disaster-stricken areas of Tainan City, the MOENV will also invite the MOL and local volunteer groups to visit victims in these areas to promote relevant policies and investigate the removal of and protection against asbestos waste and assess any damage. Results will be reported to the relevant competent agencies immediately to assist in recoveries as soon as possible.

Asbestos roof tiles were damaged and fell to the ground on some houses in the wake of Typhoon Danas. The MOENV reminds the public to refer to the *Guidelines for Disposal of Asbestos-Containing Wastes* after Natural Disaster and, while clearing debris, to wear N95 masks and gloves, to wet the asbestos materials, and to completely cover them with plastic bags, feed bags, or canvas following the principles of no touching, no breaking, and no exposing. Afterwards, requests for removal are to be made to local environmental protection bureaus or district offices. If it is needed to remove asbestos roof tiles, it is recommended to commission legitimate construction companies, which are required to ensure proper working environments and personal protection measures following the MOL's "*Guidelines of Hazard Prevention for Post-Disaster Removal and Clearance of Asbestos-Containing Corrugated Roofing Sheets"* and the MOI's "*Regulations for Building Demolitions* (建築物拆除施工規範)".

Those who need asbestos waste removal may contact local environmental protection bureaus (05-2251775, #307 and 312 for Chiayi City Environmental Protection Bureau; 05-3620800, #314 and 318 for Chiayi County Environmental Protection Bureau; 06-2686751, #1627, 1637 and 1628 for Tainan City Environmental Protection Bureau; or respective websites for other local bureaus), or call the Resource Circulation Administration, MOENV at 02-8771-0152. Information is also available on Asbestos Information Platform – Application of Subsidies for Asbestos Waste Removal and Disposal at https://topic.moenv.gov.tw/asbestos/cp-681-10681-087c5-4.html.

Minister Peng explains regulations with officers in charge

Post-disaster asbestos waste disposal

5. Plastic liner and blister packaging suppliers will be required to provide resin identification codes on their products, starting from July 1, 2027

Aiming to intensify promotion of recycling for plastic liners and blister packaging and align with international material labeling for plastic packaging, the MOENV promulgated the amended "*Regulations Concerning Scope of Enterprises Responsible for Marking Relevant Recycling Labels on Articles and Containers, Size, Locations and Other Binding Matters for Recycling Labels* (應標示回收相關標誌之物品或容器責任業者範圍、標誌圖樣大小、位置及其他應遵行事項)". Regulations regarding labeling resin identification codes on plastic liners and blister packaging were added in the revisions and will take effect on 1 July 2027.

MOENV explained that this amendment is mainly to correspond to the new announcement in 2023 that plastic liners and blister packaging are recyclable waste. To intensify the recycling efforts of the public, government agencies and schools, enterprises that manufacture or import plastic liners or blister packaging for unpackaged products are required to mark resin identification codes on liners and/or packaging. Enterprises importing products already containing plastic liners or blister packaging are mandated to put such code on the products or the product packaging or their labels. In addition, should a business choose to mark the resin identification code on the packaging or labels of imported products, information of corresponding packaging materials or containers should be also provided below the code to identify the plastic materials.

If plastic liners or blister packaging were used to package medicines, health supplements or medical devices, the MOENV further pointed out that the labeling requirement may be waived for such plastic materials. The reason is that labeling the packaging materials may involve changes of the packaging materials or structure, which are subject to a series of stability tests, pre-clinical tests and reviews of Ministry of Health and Welfare for approval and therefore may affect product supply stability and needs regarding public health.

The MOENV stressed that plastic liner and packaging suppliers already registered before the date of promulgation (July 1, 2027) are required to provide the resin identification codes no later than 30 September 2027; those who register after are required to do the same starting the day after registering for three months. It is hoped that this labeling requirement will lead suppliers to simplify packaging materials and will encourage the public, government agencies and schools to properly recycle plastic packaging materials.

Plastic liner and blister suppliers are required to mark Resin ID Codes from 2027

Putting resin ID codes on packaging or labels for imported products containing multiple plastic materials

6. Seaweed Restoration and Mangrove Forestation Approved as Reduction Methodologies

The MOENV conducted the 19th meeting for reviews on GHG offset projects and voluntary reduction plans review committee on 24 July 2025, approving "seaweed restoration" and "mangrove forestation" as the two new reduction methodologies. Domestically developed, these two will be employed to expand Taiwan's efforts to increase carbon sinks into the oceans. It is hoped that it will encourage domestic industries to develop potential for ocean carbon sinks via the mechanism of issuing reduction credits thereby helping Taiwan achieve net zero.

The MOENV indicated that seaweed restoration and mangrove forestation, jointly proposed by the Ministry of Agriculture (MOA) and the Ocean Affairs Council (OAC), are the first local voluntary GHG reduction methodologies in the field of "blue carbon". Since civil organizations in Taiwan are quite concerned with this as well, the MOENV invited experts in this field to serve as external consultants as well as relevant civil organizations to engage in discussions and express their opinions, which were taken into consideration. These two methodologies were revised and approved in the 19th meeting on 24 July after draft announcement, consultation with public opinion, and discussions with experts in multiple meetings. The following are several key points:

I. Avoid ecological or environmental impacts

i. **Limit executable areas:** Measures such as mangrove or seaweed forestation will inevitably alter the environments where they are carried out. To avoid significant impacts on the ecosystems or environments, the areas where such measures can take place are restricted as suggested by public opinion. Seaweed restoration is limited to "ocean or coastal wetlands" and "manmade wetlands", while mangrove forestation is limited to "manmade wetlands," such as fallow salt fields, fish farms, and impounding reservoirs.

ii. **Take corresponding actions:** The applicability of seaweed restoration specifies that no biological removal within the project boundaries unless it is necessary for seaweed protection; and for mangrove forestation, it is mandated that it should take necessary actions to keep mangrove plants from growing outside of the project boundaries. In addition, project applicants are required to conduct environmental impact analysis and collect public opinions for both methodologies prior to project execution and include the analysis results in the project proposals.

II. Specify quantified monitoring and reduction results and avoid overestimation

For the voluntary GHG reduction mechanism, the ability to measure, report, and verify results is important. Results also need to be additional, conservative, and permanent. Therefore, the review committee members and the MOENV have requested the OAC to establish standard operating procedures for carbon sink measurement for project applicants to follow accordingly. They also specified that benefits of increased carbon sinks generated after implementation of these measures are specific and not overestimated in terms of monitoring and calculation. At the same time, it is mandatory in the reduction methodologies mandate execution according to the officially published procedures. Furthermore, carbon emissions generated from carrying out this measure should be deducted from the calculation, including the GHG emissions from

fossil fuels used in project implementation.

The reduction methodologies approved this time will be published by the MOENV and made available at the Voluntary GHG Reduction and Offset Information Platform (溫室氣體自願減量暨抵換資訊平臺) as soon as they are revised by the MOA and the OAC according to meeting resolutions. MOENV has also requested both ministries to provide needed assistance with more efforts on personnel training as soon as possible as applicants for voluntary reduction projects are to be verified by third-party verification institutes first. The MOENV noted that Taiwan has incorporated natural carbon sinks as a key strategy for net-zero emissions and that international voluntary reduction mechanisms are also moving toward reduction projects utilizing carbon sinks (removal). With the two newly announced methodologies, the MOENV has approved and publicly released a total of seven domestic carbon-sink reduction methodologies so far, hoping to further support Taiwan's progress toward its net-zero goal.

7. MOENV and Ministry of Health and Welfare Launch Training Program for Green Practices in the Medical Care Field

The Ministry of Environment (MOENV) has been endeavoring to help industries characterized by high energy consumption transition to low-carbon energy in line with global climate change initiatives, contributing to reaching Taiwan's policy goal of "2050 net zero emissions". Since medical institutions place high demand on energy and resources, it is crucial for Taiwan's sustainable development that medical institutions assisting them in enhancing their environmental management, reduce CO_2 emissions and improve their performance in circulating resources.

Mr. Liu Tsung-Yung, president of the MOENV's National Environment Research Academy (NERA), pointed out that striving for net-zero in the field of medical care is an ongoing international trend. The World Health Organization (WHO), the United Nations Framework Convention on Climate Change (UNFCCC) and multiple international health institutions are working to promote the reduction of CO_2 emissions in the medical and healthcare area. Attention to environmental sustainability in the delivery of medical care will inevitably grow in alignment with international trends. The medical care field in Taiwan will need to enhance the resilience of its healthcare system to maintain and improve its international competitiveness and reputation.

The MOENV approved the *"Developing Green Healthcare Initiatives"* (綠色醫療推動方案) on 16 May 2025. In collaboration with the Ministry of Health and Welfare developed 7 strategies and 14 actions -- for example, in the areas of waste reduction, indoor air quality improvement, water resource management, green chemistry, and carbon inventorying -- to help Taiwan's medical care field improve its CO_2 reduction and sustainable governance capabilities.

Better environmental performance in the medical care field is expected to be achieved through joint visits and counseling, professional training, and the establishment of demonstration sites, thus jointly realizing the policy vision of "Healthy Taiwan, Green Healthcare."

The NERA is planning to provide four sessions of "green medical talent training" in 2025 to improve the professional skills of frontline workers. Director General Liu Yueh-Ping of the Department of Medical Affairs, Ministry of Health and Welfare; Secretary General Chan Ming-Chin of the Infection

Control Society of Taiwan; Deputy Secretary General Kuo Chin-Ni of the Taiwan Medical Industry Management and Development Association; Prof. Wang Gen-Shuh of National Taiwan University; Prof. Tsai Ying-I of Chia Nan University of Pharmacy & Science, and many more experts and scholars have been invited as instructors. The program covers green medical policies and trends, carbon neutrality, ESG practices, energy saving and CO_2 reduction technologies for medical institutions, waste classification and reduction, indoor air quality management, and medical wastewater treatment. Teaching in theory and case studies will be combined to enhance the practical skills of trainees.

One hundred sixty trainees from 105 national-level medical centers as well as from regional hospitals are to take part in these professional training programs, aimed at improving the overall capabilities of medical institutions to promote environmental sustainability and the transition to net-zero.

In addition, the MOENV and the Ministry of Health and Welfare will continue to promote inter-hospital exchanges and the sharing of practical experience through events such as the "Seminar on Waste Management and Pollution Control for Medical Institutions" to further enhance the overall pollution control and effectiveness of environmental management of medical institutions.

Director General Liu Yueh-Ping of the Department of Medical Affairs giving her lecture

Secretary General Chan Ming-Chin of Infection Control Society of Taiwan giving his lecture

8. Up to NT$2,100 Offered for Replacing Old Motorcycles to Reducing CO_2 Emissions

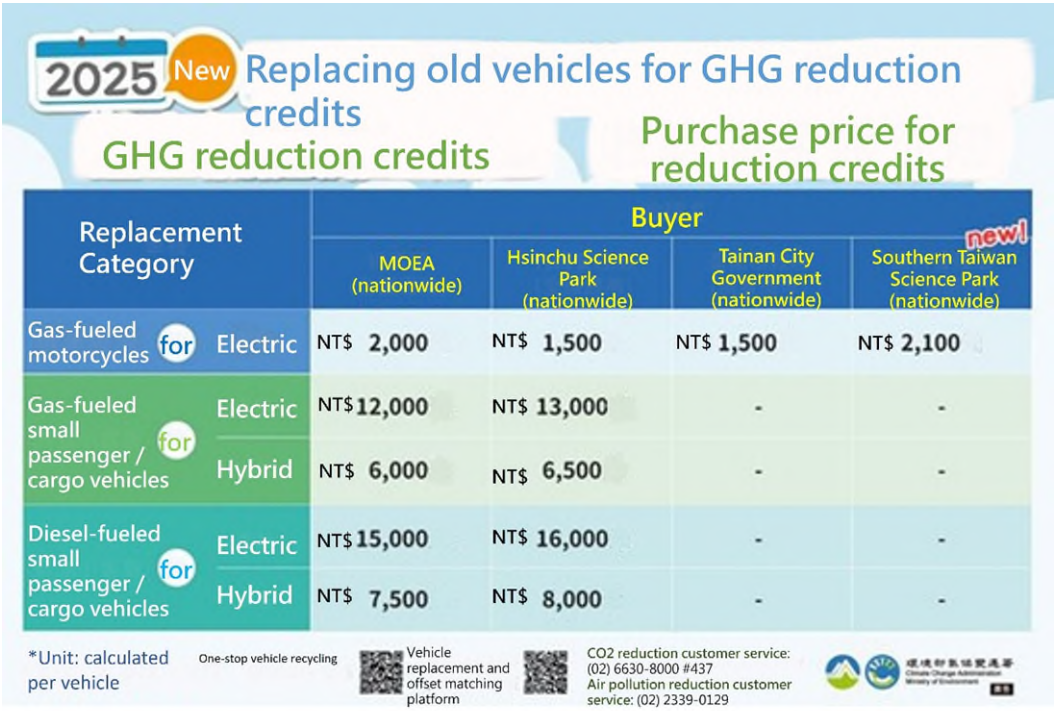
In 2022, the Ministry of Environment (MOENV) launched a program to encourage the replacement of old motorcycles and help realize the goal of net-zero emissions. The program includes a matching service to help, on one hand, new business establishments (or those who upgrade the emission sources they operate, such as motorcycle owners) to be credited for their reduction of greenhouse gas (GHG) emissions. Concurrently, to offset the increased emission increments from development activities, developers subject to environmental impact assessments are encouraged to purchase the GHG reduction credits that motorcycles owners earn from replacing their old motorcycles. This matching program not only helps reduce GHG emissions by encouraging the replacement of old motorcycles, but it also reduces the financial burden of buying new motorcycles, while encouraging electric vehicles. On 7 July 2025, the Southern Taiwan Science Park of the National Science and Technology Council joined this matching program as a carbon credit purchaser. For any motorcycle owner who earns carbon credit to replace an old vehicle with a new one, the science park will offer NT$2,100 for the credit, the highest price on the market. The total subsidy can be considered even higher, at NT$3,400 per motorcycle, if the NT$1,000 air pollution subsidy and the NT$300 old vehicle recycling reward are added.

The MOENV established the *"greenhouse gas reduction benefit matching service operation procedures for replacing old motorcycles with electric ones"* (淘汰老舊機車換購電動機車溫室氣體減量效益媒合服務作業程序) and the *"greenhouse gas reduction benefit matching service operation procedures for replacing old cars with new ones"* (老舊汽車汰舊換新溫室氣體減量效益媒合服務作業程序) in 2022 and 2023, respectively. Those who are interested in replacing their vehicles that are at least 10 years old with electric or hybrid may visit the MOENV's *"vehicle replacement and offset matching platform"* (車輛汰舊換新抵換媒合平臺) to look for and get matched with buyers of CO_2 reduction credits, such as developers and local governments. Data from 2022 to May 2025 indicate that more than 100,000 old motorcycles and cars have been registered

at the platform for replacement, generating reduction credits of approximately 435,000 metric tons of carbon dioxide equivalent (CO_2e).

The Southern Taiwan Science Park, a new CO_2 reduction credit buyer, is planning to purchase credits from the replacement of 1,675 old motorcycles. As every old motorcycle represents 2.3 metric tons of CO_2e reduction if replaced with an electric one, it is expected this will generate 3,853 metric tons worth of CO_2e of reduction credits. Based on an estimated air pollution reduction credit of 22.07 kg/motorcycle, air pollution emissions can be reduced by approximately 36.97 metric tons, achieving the dual benefits of carbon reduction and pollution reduction. By adding the Southern Taiwan Science Park, there are now four carbon reduction credit buyers on the current matching platform (in addition to the Ministry of Economic Affairs, the Hsinchu Science Park and the Tainan City Government). Members of the public or businesses may choose an appropriate plan and apply based on the type of vehicle they want to replace.

MOENV stated that there are currently 40 development projects whose environmental impact assessments have been approved, and which are required to implement GHG offsets. Thus, more developers will become potential buyers of carbon offset credits. The MOENV encourages those with old vehicles to replace them with more environmentally friendly electric vehicles as soon as possible to work together toward Taiwan's net zero emissions.



Carbon credit purchase prices by vehicle type for old vehicle replacement promoted by the MOENV

9. Environmental Info Push App Upgrades Help with Trip Planning

With summer here, people are still travelling around Taiwan. The "Environmental Info Push App" can be downloaded to make it easier to find information on air quality, weather forecasts, temperatures and environmental facilities in real time. The app provides convenience to travelers by combining a smart warning mechanism with the latest air quality standards, combined with a

search service to find environmental facilities.

Aiming to provide a wider spectrum of public health protection, on January 1, 2025 the Ministry of Environment (MOENV) began to implement the latest *Air Quality Standards* (空氣品質標準), significantly increasing the stringency of AQI pollutant concentration thresholds to meet more rigorous air quality requirements. To strengthen protection for sensitive groups, a protection alert is posted on both the "Environmental Info Push App" and the "Air Quality Monitoring Network" when hourly concentrations of specific pollutants reach warning levels, sending immediate reminders to the public to take precautionary measures. As of 30 June 2025, a total of 7,378 such alerts have been issued, demonstrating the proactive efforts of the MOENV to provide timely air quality warnings and safeguarding public health.

The MOENV also takes protecting the respiratory health of school children very seriously. A real-time air quality monitoring station dashboard widget was launched on the "Air Quality Monitoring Network" to address the potential impact of air quality at schools on the development and learning of children. This service allows schools nationwide to embed real-time data widgets directly on their websites, accurately presenting the latest information on AQI, $PM_{2.5}$, PM_{10}, and O_3. This not only provides schools with an "eye in the sky" for monitoring air quality near schools, allowing teachers to flexibly adjust outdoor activities based on solid data, but also gives parents access to information at any time, providing greater peace of mind regarding their children's learning environment. To date there has been a high demand for this service, with 5,113 websites requesting to use it, demonstrating its usefulness.

The "Environmental Info Push App" not only provides local air quality information in real time but also serves as a valuable smart travel companion. Whether looking for a place for a good meal or a restroom, the app can immediately point users in the right direction. It provides nine types of convenient services: environmentally friendly restaurants, green-label hotels, places for borrowing reusable cups, restaurants serving food using environmentally friendly reusable containers, environmentally friendly shops, public restrooms, drinking fountains, agricultural/forest recreation sites and motorcycle inspection stations.

For anyone searching for information on air pollution plumes from factories in the vicinity of their travels, the app also integrates a real-time information system that provides access to continuous monitoring data on emissions from controlled pollution sources. Thus, users can access the latest air pollution emission info at any time from any place with a cellphone.

The MOENV sincerely invites all citizens to download the "Environmental Info Push App" from Google Play (for Android) and App Store (for iOS) while enjoying their summer vacation. It can serve as a smart secretary that can be carried everywhere. No matter where you are, air quality information can always be accessed in real time, for safe and healthy travel in every corner of Taiwan, while helping to protect the environment and both the environment and your personal health.

Environmental Info Push App: a smart secretary to help travelers in Taiwan

10. Potential Value of "Wastewater Mining" Estimated to be Over NT$3.5 billion Annually

The Ministry of Environment (MOENV) held the "Heavy Metal Wastewater Resource Utilization Forum" on July 28, 2025, in Taipei City, focusing on the recovery of copper and nickel from wastewater and industrial sludge. Academic experts, engineering equipment suppliers, and factories with the potential to recover resources -- such as those involved in electroplating, printed circuit board manufacturing, and metal surface treatment -- were invited to exchange ideas and promote a green transition and resource recovery from wastewater treatment, which not only ameliorates water body pollution at its source, but also helps build a circular economy. By recovering resources such as copper, nickel, nitrogen and phosphorus from wastewater at proposed treatment plants, potential economic benefits of an estimated NT$3.5 billion per year could be generated from the recovered materials, while also lead to a reduction in chemical costs by more than 20% and sludge treatment costs by more than 50%.

The MOENV stated that traditional wastewater treatment works to remove pollutants and meet discharge standards. Heavy metal pollutants are often treated using coagulation and sedimentation processes. However, this often results in massive sludge production and prevents the recovery of valuable materials. The resource recovery techniques and technologies discussed at this forum included electrochemistry, fluidized bed crystallization, ion exchange resins, and membrane reactors,

all of which are mature technologies with proven performance or validated use at factories, that can effectively address wastewater issues and achieve the benefits of resource recovery. For example, the "copper in liquid" technology, which uses electrolysis to treat copper in wastewater, helps businesses recover approximately 3,000 metric tons of copper annually; membrane filtration technology increases the heavy metal content of sludge from 3–4% to over 10%, diverting the sludge into a waste circulation system and reducing the use of coagulants and other chemicals; and crystallization technology can produce nickel sulfate with a purity exceeding 99% for use as a chemical material.

Deputy Minister Yeh Jiunn-Horng of the MOENV noted in his speech that the idea of a circular economy has become widespread in recent years. The concepts of source diversion and circular economy have been introduced in Taiwan, to recover valuable substances contained in wastewater that can be reused, which has gradually become a mainstream pollution prevention measure. This green approach of "recovering resources from wastewater and returning them to industrial use" not only reduces environmental burdens but also aligns with the current global trend of sustainable development, signaling Taiwan's groundbreaking progress in promoting the circular economy and wastewater treatment. Professor Huang Chih-Pin of Yang-Ming Chiao Tung University also said that technologies have matured, leading to commercial successes in "wastewater mining" for high-volume metals such as copper and nickel.

The MOENV stressed that it will continue to leverage technology to guide the industry's transition to a circular economy and accelerate recovery of resources from wastewater through strategies such as regulatory changes and economic incentives. This includes the passing and amendment of regulations such as the "*Effluent Standards*" (放流水標準), "*Water Pollution Control Measures and Test Reporting Management Regulations*" (水污染防治措施管理辦法), and "*Regulations Governing the Collection of Enterprises and Sewage Systems Water Pollution Control Fees*" (水污費收費辦法). Local funding is brought in to establish green transition demonstration sites. For businesses initiating green transitions in wastewater treatment, special loan credit guarantees will be provided to assist with financing, and funds will be used to support the development of innovative, resource-circulating, low-carbon and energy-saving wastewater treatment technologies. These efforts are hoped to lead the green transition of wastewater treatment and contribute to a circular economy.

Deputy Minister Yeh Jiunn-Horng of the MOENV (2nd from left) speaking in the forum

Attendants of the "Heavy Metal Wastewater Resource Utilization Forum"

11. New Awards Rewarded as Green Procurement Reaches New Heights

On July 30, 2025, the Ministry of Environment (MOENV) held the "2024 Private Enterprise and Group Green Procurement Outstanding Unit Award Ceremony" in Taipei City to recognize the support and efforts of private enterprises and groups in green procurement. Deputy Minister Shih Wen-Chen commended businesses and groups for outstanding green procurement performance

in 2024, as well as accommodation businesses that have achieved gold or silver environmental certification in the past year, in addition to businesses that have maintained environmental certification for their products for 20 consecutive years. Deputy Minister Shih took the opportunity to show appreciation to businesses that collaborated with the MOENV on green procurement. The award ceremony served to encourage more entities to join the ranks of green procurement and green consumption and contribute to sustainable development.

MOENV is actively promoting various specific policies to reach the national net-zero goal. The "Government Chief Sustainability Officer (CSO) Consensus Camp" held in November 2024 highlighted green procurement as an important priority. It was also proposed that the amount of green procurement by private enterprises be increased by 10% annually, with the 2030 target of NT$128 billion, while promoting green upgrades in industries and supply chains. To achieve this, the MOENV continues to expand the scope of recognition for good green procurement performance. In 2025, MOENV added new projects such as deep energy efficiency services and renewable energy power generation equipment and promoted the "leasing instead of buying" model to reduce waste at source.

Considering that more than 90% of enterprises in Taiwan are small and medium-sized businesses, in 2024 the MOENV took a "recognition by group" approach to encourage small and medium size enterprises to participate in green procurement. Five groups were established according to industry and enterprise size: 1) manufacturing-large enterprises group; 2) manufacturing-small and medium-sized enterprises group; 3) non-manufacturing-large enterprises group; 4) non-manufacturing-small and medium-sized enterprises group, and 5) other. The top 10 businesses in each group were selected and commended for their proactive actions in promoting green procurement and their contributions to environmental protection.

The supply and demand cycle for green products is also a key to improving green procurement. While promoting green procurement, the MOENV recognizes the support from businesses for green labelling and encourages businesses to obtain such labels. This year, the MOENV recognized five businesses for having maintained green label certification for 20 consecutive years. Such a duration signifies that a business has made long-term, unremitting efforts and commitment to quality, eco-friendly design, and sustainable management. The five recognized businesses not only consistently provide high-quality green products but also play a firm role in leading the sustainable transformation of industries, enhancing the market credibility of green products and setting an example for other businesses. Hopefully, their public recognition will serve to encourage more businesses to invest in environmentally friendly products and services.

The green label is not only available for products but also for the service industry. As of now, 168 hotels and B&Bs throughout Taiwan have been awarded the green label. Thirty-six accommodation businesses that were awarded gold or silver, green labels in the past year were recognized in this year’s ceremony. These businesses demonstrate the industry's determination and initiative for a green transition by implementing energy conservation and carbon reduction, plastic waste reduction, eco-friendly food services, and smart management.

Representatives from two high-performing companies shared their experiences at the ceremony. The manufacturing representative "Cheng Loong Corp." and the non-manufacturing representative "Cathay Financial Holdings Co., Ltd.", have both been committed to green procurement for many years. Hopefully, the practical experiences shared by these two companies will help more businesses

understand the promotion methods and operational models for green procurement, expand private sector participation and strengthen the sustainable industrial chain.

MOENV (formerly the Environmental Protection Administration, Executive Yuan) has been promoting the green label since 1982. In 2007, it initiated green procurement by government agencies and since then, it has expanded beyond the governmental sector. Thanks to years of hard work, green procurement by private enterprises and groups reached NT$74.3 billion in 2024, with 3,148 businesses participating and an increase of nearly NT$8.6 billion compared to 2023, producing outstanding results. Among all the private green procurement, products with the Forest Stewardship Council (FSC) certification, eco-label, and Energy Star products are the most common, accounting for approximately 70% of the total green procurement volume.

In recent years, green procurement has taken root through public-private partnerships and the cooperation and involvement of various industries. MOENV is grateful for the solid actions taken by private businesses and organizations. By publicly recognizing these initiatives, it is hoped that more businesses and organizations will be encouraged to follow suit, build a more comprehensive green supply chain, expand green services, and work together with the government to shape Taiwan's green credentials and move towards a net-zero green lifestyle.

Deputy Minister Shih Wen-Chen of the MOENV speaking at the award ceremony

Attendants of the "2024 Private Enterprise and Group Green Procurement Outstanding Unit Award Ceremony"