



Major Environmental Policies

Feb 2024

1. 9 Departments Jointly Put in NT\$76.6 billion for Phase II Air Pollution Control Plan

The MOENV rolled out the Phase II Air Pollution Control Plan (from 2024 to 2027) as the continued efforts for the Phase I Air Pollution Control Plan (from 2020 to 2023) in the previous 4 years. The plan was approved by the Executive Yuan on 21 December 2023. An estimated budget of NT\$76.6 billion is to be used on 37 precise reduction actions in 8 aspects through accurate governance, combining net-zero transitions and pollution and emission reduction strategies and also integrating capacities of 9 government departments. The target is to by 2027 lower the average concentration of particulate matters (PM_{2.5}) to 13 µg/m³, and number of station-days with eight-hour ozone concentration reaching the red-alarm levels by 80% as opposed to that of 2019.

Unlike the Phase I plan where the focus was on improvement of end-of-pipe emissions from conventional stationery and mobile sources, such as stated-owned enterprises, boilers and old vehicles, the Phase II plan aims to combine net-zero emission and cross-departmental capacity for improvement of air quality from pollution sources. The MOENV is planning to put in NT\$7.9 billion in several aspects, including stricter emission standards to reduce emissions of pollutants from factories and vehicles, and subsidies for electric buses, charging station installation and optimization of electric bus network for an electric vehicle-friendly environment. The Ministry of Economic Affairs (MOEA) is working to appropriate NT\$1.8 billion on industrial consultation and improvement, electric logistics vehicles and energy replenishing facilities for electric motorcycles. The Ministry of Transportation and Communications (MOTC) and the Ministry of Agriculture (MOA) are expected to pour NT\$1.9 billion in green transportation and improvement of riverbank airborne dusts. As a cross-departmental joint effort, state-owned and -invested enterprises, such as Tai Power, China Petroleum Corporation, China Steel Corporation and Chunghwa Post, are planning to put in a total of NT\$65 billion on air pollution-reducing measures. They include process improvement, optimization of efficiency of pollution control equipment and electrification of mail truck fleet.

The MOENV pointed out that the 2025 net-zero emission target is challenging. The Phase II plan will continue to enhance reduction technologies for all industries, strengthen vehicle and machinery management, promote pollution, and carbon reduction strategies, and strengthen specific seasonal responses. Central and local government departments will be joining hand in lowering air pollution instead of individual departments working separately and independently. It is hoped that all government departments, industries, civil organizations, and the public work together to utilize clean energy, develop green technologies, practice net-zero green lifestyle, promote green and low-carbon transportation, and deepen environmental education. This all-around and diversified approach will help build an environment of better air quality and in turn protect the public's health.



Cooperative governance across nine departments

2. Street Light Color Temperature Limits Added to Tighten Light Pollution Control

The MOENV promulgated the amended *Light Pollution Management Guidelines* (光污染管理指引) on 4 January 2024. Several requirements are newly added, in which the street lights' color temperature should not be higher than 3000K in national parks, nature protection and conservation areas, and ecological conservation areas or 3500K for roads of all levels. Also, for the flickers of large advertisement billboards, the flicker nuisance is recommended not to be lower than five in commercial areas from 6:00 to 11:00 pm, and switch to still displays or turning off the signs is recommended after 11:00 pm for protection of ecosystems and people's living quality.

The recommended values for maximum luminance and maximum vertical light exposure are defined in the *Light Pollution Management Guidelines* promulgated on 19 March 2020, which were incorporated into respective regulations of government departments for better management. The recommended luminance and intensity have been adopted in the Application Form for Permits of Billboards and Erected Advertisements and the Traffic Engineering Regulations and Construction Project Specifications by the Ministry of the Interior (MOI) and the MOTC, respectively, for at-source light pollution management.

Government departments like the MOEA, the MOA and the Ministry of Education (MOE) have been included in this amendment of the *Light Pollution Management Guidelines* for expanded cross-departmental cooperation. To collect opinions from all sides, ecological, medical, public health, ergonomic, and environmental experts, and environmental protection groups were invited in three consultation meetings, in addition to 4 workshops between the departments involved and local governments. The MOENV will have all relevant government departments and local governments to

jointly promote light pollution management, implement at-source management effectively, and minimize the impacts of light pollution on people and the environment.

3. Regulations Amended for Water Pollution Control Measure Plans and Permits

The MOENV promulgated the amended *Management Regulations for Application and Examination of the Water Pollution Control Measure Plans and Permits* (水污染防治措施計畫及許可申請審查管理辦法) on 11 January 2024. The amended articles are in effect as of the day of promulgation with the following key points:

1. Clarifying the principles of permit application, change or review extension

When the issuing authorities reviews a water pollution control measure plan or permit (document), it is prohibited to add any obligation unspecified in any regulations in any form of penalty. The issuing authority may correct obvious mistakes, such as incorrect writing or calculation, found when reviewing a water pollution control measure plan or permit (document). And it is prohibited to make any change to any originally approved items under registration during extension of permits (documents).

2. Integrating with other environmental permits

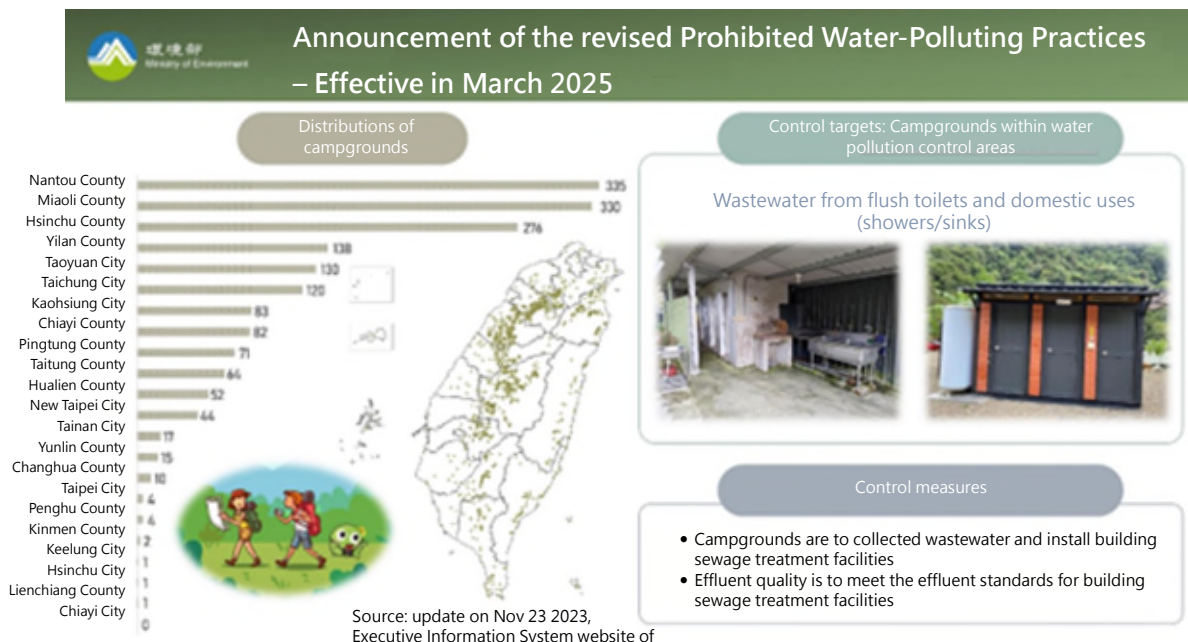
For enterprise or sewage systems, a map or plan showing the flow(s) of pollutions, including air, water, wastes, toxic and concerned chemical substances, shall be submitted prior to the application, change, or extension of water pollution control measure plans, or permits. (documents) And the same map is to be submitted concurrently if it involves application, change, modification, or extension of any other environment-related permits. However, this does not apply to those with evidence of no substantial involvement. For cases not submitted concurrently, the issuing authority may continue the evaluation.

4. Campgrounds Not Properly Disposing Wastewater Subject to Penalties from March 2025

The MOENV promulgated the amended *Prohibition of Water-Polluting Practices* (禁止足使水污染行為) on 16 January 2024. It requires campgrounds located within water pollution control areas to collect wastewater and install wastewater treatment facilities for treatment, as well as specifies that quality of treated wastewater shall meet the *Effluent Standard* (放流水標準). Considering the need for facility improvement, the regulations will take effective on 1 March 2025, granting campground enterprises a year of buffering period for proper response.

The MOENV promulgated the revised *Prohibited Water-Polluting Practices* according to Article 30, paragraph 1, item 5 of the *Water Pollution Control Act* (水污染防治法). The purpose is that campgrounds properly collect wastewater and install treatment facilities, preventing direct contamination of water bodies in water source areas. If it is found not connected to sewage systems or centralized disposal facilities or not having commissioned disposal enterprises to handle generated wastewater, campgrounds are subject to a fine between NT\$30,000 and 300,000. In addition, the effluent quality shall meet the effluent standards for building sewage treatment facilities. For better environmental quality, exceeding the standards is punishable by a fine between NT\$3,000 and 300,000.

Furthermore, the MOENV had promulgated the *Guidelines for Application and Evaluation of Campground Environmental Protection Affairs* (露營場環境保護事項申請及審查指引) and its amendment on 7 March 2023 and 9 May 2023, respectively. It serves as the basis for campground competent authorities, local environmental protection bureaus and campground enterprises to follow in the evaluation of campground legalization. At the same time of the announcement of the revised prohibited practices, the MOENV also proposed the second amended version of the guidelines.



Campground Wastewaters is to be collected and disposed, as mandated by the MOENV

5. MOENV Accepts Recommendations of Carbon Fee Rate Review Committee Members

The MOENV was accepting public recommendations of the first-term members of the carbon fee rate review committee from 18 to 31 January 2024. The term will be two years.

The MOENV pointed out that the annual greenhouse gas (GHG) emission of carbon fee collection target is included in the pricing as of this year, and the fee will be collected in the next year. The *Climate Change Response Act* (氣候變遷因應法) Article 28 specifies that the carbon fee rate is reviewed by the carbon fee rate review committee and then approved and promulgated by MOENV.

The *Guidelines for Establishment of the Carbon Fee Rate Review Committee* (碳費費率審議會設置要點) were promulgated on 1 December 2023, designating the MOENV Deputy Minister the committee convenor and the Director General of the Climate Change Administration (CCA) the deputy convenor. The committee are to have 19 to 23 members, who are representatives from government agencies and NGOs, as well as experts and scholars, all selected by the MOENV Minister. No less than 2/3 of the members shall come from fields other than government agencies, and either gender shall be no less than 1/3. Such effort aims to include representatives and opinions from all fields as much as possible and achieve gender equality.

For the selection of expert and scholars, the MOENV accepted recommendations until 31 January 2024 (using the attached recommendation form). The nominees will be categorized in four fields,

including “environment,” “energy and resource,” “economy, finance and accounting” and “legal”. To allow the selection to proceed later, it is preferred that the nominee’s consent is obtained before the recommendation.

The MOENV mentioned that the carbon fee rate is a highly concerned topic for all sectors and thus requires participation and discussion of experts and scholars specialized and experienced in related fields. All are welcome to recommend professionals with outstanding achievements for the position of carbon fee rate committee member.

6. Plastics Reduction Policies Rolled Out in Response to Global Trend

The Resource Circulation Administration (RECA) of the MOENV points out that reducing use of plastic shopping bags is part of the plastics reduction policy. It is now specified that no free plastic shopping bag shall be provided and the scope is expanded from seven to 14 types of industry. The latest data has shown that the annual use of plastic shopping bags has dropped from approximately 20 billion before the control efforts to 9.17 billion today. Several plastics reduction policies have been rolled out since 2002, with regulations mandating enterprises to lower use of plastic shopping bags, disposable utensils, single-use beverage cups, online shopping packaging and hotel supplies. Future control measures will continue to be enhanced.

The RECA stated that it is an international trend and part of Tiwan’s plastics reduction policies to reduce the use of plastic shopping bags. Evaluation is necessary, since this covers lots of areas. Regulations have been formulated, with meetings on the way for discussion. Also, if some local governments wish to start the per bag trash collection fee policy, the two-bag-in-one policy may be expanded to these cities and counties. The RECA will subsidize the trial programs to help the willing cities and counties to promote such policy. For traditional markets, food stands, breakfast places and restaurants, the focus is on quantity control based on pricing and to encourage self-supplying or circular service, as to help people develop the habits of “preparing your own, using repeatedly, and using less.”

The RECA explains that it is paying close attention to the progress of the international plastics conventions and will emphasize reducing the use of raw materials and improving resource use efficiency in the draft *Resource Circulation Promotion Act* (資源循環促進法). Measures include promoting at-source control, introduction of recycled materials in products with designs that allow easy dismantling, maintenance, and recycling, promoting repeated use of containers, Others are minimal packaging, produce in the nude, and services of leasing, repair and buyback provided by producers and brand operators to prolong products’ lifespan. All these strategies and measures can help achieve effective use and circulation of vital resources. Future focuses are to minimize inconvenience to the public and environmental impacts, respect and consult public opinions, continue communication and discussion, and review control measures for plastic shopping bags. These actions will be gradually implemented in different phases and toward different targets, and the RECA will carefully evaluate and review the directions and schedules of Taiwan's at-source management and policies.

7. Resource Circulation Administration Puts out Tenders for Innovative Projects

The Ministry of Environment’s (MOENV) Resource Circulation Administration (RECA) recently put out tenders for resource circulation innovation and research and development (R&D) project proposals for 2024. The proposals were received from 9 January 2024 to 19 February 2024. All were welcome to submit innovation proposals, including universities and colleges, research

institutes, product manufacturers, businesses responsible for waste recycling and disposal, government-owned and private waste cleaning and removal firms, reuse firms, product repair or circulation firms, and factories, companies, or other legal entities engaged in relevant industries. Each subsidy will be up to NT\$5 million, with a total budget of NT\$100 million.

The RECA pointed out that it has been looking for innovative R&D project proposals for resource recycling since 2022, and subsidies have been provided to 199 projects up to 2023. This year (2024), the scope of application has been expanded to include product design, use, repair, recycling, reuse, and final disposal, so as to encourage diversified circulation operation models and effective improvement of resource usage benefits.

There are three types of projects this year, namely “innovative R&D” focusing on introduction or development of novel technologies, “technical improvement” striving for improvement or refinement of existing technologies, and “topic study” aimed at solving specific issues. Proposals of any type and topic that meet the subsidy criteria or entrustment are eligible to apply. It is hoped that technical innovations and improvements to existing technologies will be made, and all are encouraged to cooperate to work toward technical breakthroughs, help the government with industrial upgrades and endeavor toward the resource circulation goal of zero waste.

The 2024 project proposals involve garbage reduction, and subsidies are available for resource recycling firms according to the “Directions of the Resource Circulation Administration, MOENV, for subsidies for resource circulation innovation and R&D projects.” A subsidy of up to NT\$5 million is available for each proposal. The project is focused on resource recycling instead of garbage reduction, and will be entrusted through tenders according to the Government Procurement Act.

8. Successful Soil and Groundwater Remediation in Tainan City

A soil and groundwater remediation site at Xinshi Factory of Mospec Semiconductor has produced encouraging results, with evidence showing pollutant levels in soil and groundwater have dropped to meet acceptable levels as stipulated in the Soil Pollution Control Standards and Groundwater Pollution Control Standards. The Ministry of Environment (MOENV) announced the removal of the site from the soil and groundwater pollution control list on 15 January, the first organic chloride remediation site in Tainan City to be removed from the list.

Four years ago, the Environmental Protection Bureau of Tainan City Government asked Mospec to formulate a plan to remediate the pollution that was found, and had the site monitored throughout the remediation. Upholding its social responsibility, Mospec spared no efforts in the remediation, spending a total of NT\$26 million on the project. The remediation was completed ahead of schedule, and inspected by the Bureau in July 2023. Test results showed that the contaminants levels in soil and groundwater had been reduced to below levels stipulated by the control criteria. Thus, the site was removed from the soil and groundwater pollution remediation watch list. Nearly 20,000 square meters of land had been revitalized.

The MOENV pointed out that industrial parks serve to boost local economies and provide local employment opportunities, but sometimes dense industrial clustering raises the possibility of pollution. This necessitates intensified cooperation between firms in the industrial parks and the park authorities to carry out soil and groundwater pollution prevention and management, perform regular tests on soil and groundwater characteristics, establish warning systems, ensure the sustainable use of industrial property, and jointly maintain soil and groundwater quality.



Verification test being conducted at the remediation site

9. Salute to the Ocean: Coastal and Riverbank Waste Reduced by 60%

The Executive Yuan approved the *“Salute to the Ocean – Coast Cleaning and Maintenance Project”* (向海致敬-海岸清潔維護計畫) in May 2020 and designated the competent authorities in charge of coastlines. A cleaning mechanism was established in which the MOENV leads 9 ministries and 15 agencies along with local governments to conduct coastal cleaning and waste source management, to build a *“Salute to the Ocean”* system that is practical to execute and endures in the long term. The goal is to have every inch of Taiwan’s 1,990 km of coastline monitored and kept clean. The waste found along the coastlines of Taiwan and its outlying islands have been decreasing both in terms of weight and volume since the project was first implemented in 2020, dropping from 2,294 metric tons in 2019 to 940 metric tons in 2023. The overall results were outstanding with a total reduction of 60% of coastal waste.

The Salute to the Ocean Project coordinates the Ministry of Environment, the Ministry of the Interior, the Ministry of Transportation and Communications, the Ministry of Economic Affairs, the Ministry of National Defense, the Ministry of Finance, the Ministry of Agriculture, the Ocean Affairs Committee and the Ministry of Education to carry out an inventory of coastal cleaning and waste source management, involving aspects for which each of these ministries is responsible. Local governments and NGOs are also brought in to cooperate. Local government agencies carry out environmental maintenance within their jurisdictions, while NGOs are involved in establishing cleanup mechanisms focused on “cleaning regularly, immediately and urgently” to make every inch of coastline clean. At the same time, the MOENV set up the *“Coastline Cleanup Information Platform”* (海岸清理資訊平台), allowing agencies to report coastline cleanup results on a regular basis and the public to report any dirty spots along the coastline. A total of 1,516 reports were received from 2020 to 2023, which were all responded to by the relevant responsible agencies, and a total of 230,000 metric tons of waste were removed.

Regarding inland river drainage, the MOENV has provided NT\$600 million of subsidies for interception of water surface waste since 2018, and the Water Resource Agency of the MOEA and the Irrigation Agency, of the Ministry of Agriculture were invited to cooperate in cleaning up a total

of 96,000 metric tons of trash. Taking 2023 as an example, waste interception was carried out 11,720 times and 19,625 inspections were performed in 2023 alone to collect a total 9,978 metric tons of intercepted waste.

The MOENV's Environmental Management Administration (EMA), appreciates what NGOs have done for river front cleanup and homeland protection. The EMA explained that river and ocean geography are complex environments where waste easily accumulates and becomes difficult to remove. It requires better cleanup efficiency from the responsible departments. The EMA would also like to urge all citizens to reduce garbage generation from the very beginning, recycle what can be reused as a resource, and not to litter in rivers and the ocean in order to protect river and ocean environments in Taiwan.



10. Cross-ministry Management of Per- and Polyfluoroalkyl Substances (PFAS) in Response to International Trends

Taiwan currently has PFAS controls consistent with the *“Stockholm Convention on Persistent Organic Pollutants”* (持久性有機污染物斯德哥爾摩公約). Apart from complying with the convention, a plan has been devised to draft the cross-ministry *“PFAS Management Action Plan”* (PFAS 管理行動計畫), which has been presented to board members and Premier Chen Chien-jen of the Executive Yuan on the *“National Chemical Substance Management Board”* after multiple discussion sessions in 2023.

The MOENV explained that the UN established the *Stockholm Convention on Persistent Organic Pollutants* to prevent persistent organic pollutants, or POPs, from harming the environment. As of 22 August 2023, 34 chemical substances are on the Stockholm Convention's control list. The chemical family known as PFAS consists of more than 10,000 substances, including some on the control list of the convention, such as perfluorooctanesulfonic acid (PFOS), perfluorooctanesulfonyl fluoride (PFOSF), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonic acid (PFHxS).

The MOENV takes POP pollution very seriously and in 2018 invited all relevant ministries to develop

Taiwan's "National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants". The plan is now carried out jointly by the MOENV, the Ministry of Health and Welfare, the Ministry of Economic Affairs, the Ministry of Agriculture, the Ministry of Finance, and the Ministry of Labor. Every year, the results of implementation are published online. For the PFAS's listed in the Stockholm Convention, Taiwan already has controls consistent with the convention in place.

The MOENV pointed out that PFAS's are potentially harmful to the environment and human health. Countries around the world have started developing intensified PFAS controls in recent years, including discussion on the feasibility and practice of full PFAS management. Therefore, Taiwan's cross-ministry "*PFAS Management Action Plan (Draft)*" is being developed to align with the Stockholm Convention and to execute better PFAS management. The MOENV drafted the cross-ministry PFAS Management Action Plan in 2023 and organized multiple meetings for further discussion. The draft was presented to Premier Chen on 16 October 2023 in a meeting of the "National Chemical Substance Management Board." Premier Chen instructed all ministries involved to consult public opinion and put risk communication mechanisms in place. The PFAS Management Action Plan will be submitted to the Executive Yuan after drafting.



Enthusiastic participation from industrial, governmental, academic and research sectors



Participants from government agencies and experts from all sectors including Deputy Minister Jiunn-Horng Yeh (6th from the left) and Director General Yein-Rui Hsieh of the Chemicals Administration (7th from the left)

11. Ministry of Environment Cooperates with NASA and Other Experts on 3D Air Quality Research in Kaohsiung and Pingtung

The Ministry of Environment (MOENV) joined forces with the Central Weather Administration, the Ministry of Transportation and Communications (MOTC), National Central University and NASA of the United States to initiate a large local air circulation research project in the Kaohsiung-Pingtung area in spring 2024, to learn about how air pollutants arrive and act in the Kaoping area and how different circulation patterns affect air quality. Three-dimensional representations of pollution distributions and the composition of air pollutants will be measured through precision instruments and air quality measurement stations via ground locations, drones, sounding balloons, wind profilers, wind LIDAR, sun photometers and satellites. The data collected will serve as part of the foundation for understanding migration and chemical changes of air pollutants. This is the first large international air quality monitoring and intensive observation experiment since the establishment of the MOENV.

The MOENV indicated that NASA set up its Chemical, Optical, and Microphysical Measurements of In-situ Troposphere (COMMIT) at Fengshan Senior High School, while National Taiwan University's Integrated Measurements of Pollution and Aerosol Composition & Transformation (IMPACT) is located at Nanzih Senior High School, both in Kaohsiung City. In addition, Kaohsiung City's mobile air quality monitoring vehicle is on roads monitoring air pollutants and hazardous contaminants such as heavy metals, carbon compounds, organic carbon, and polycyclic aromatic hydrocarbons (PAHs), and assessing their impacts on the air quality in Kaohsiung and Pingtung, particularly after the wind shifts direction. The data collected are combined with those collected by the MOENV's observation stations at Qiaotou, Nanzi, Qianjin, Fengshan, Xiaogang and Linyuan, to enable a comprehensive analysis of air quality in the Kaoping area. This includes assessments of atmospheric visibility, and

the migration and reactions of aerosol and particulate pollutants, such as fine particles (PM_{2.5}) and ultra-fine particles (UFP). The results contributed significantly to the 3D analysis of air pollutants in the Kaoping area. Eight additional environmental protection bureaus in central and eastern Taiwan, in the counties of Yunlin, Chiayi, Tainan, Kaohsiung and Pingtung, joined the research effort.

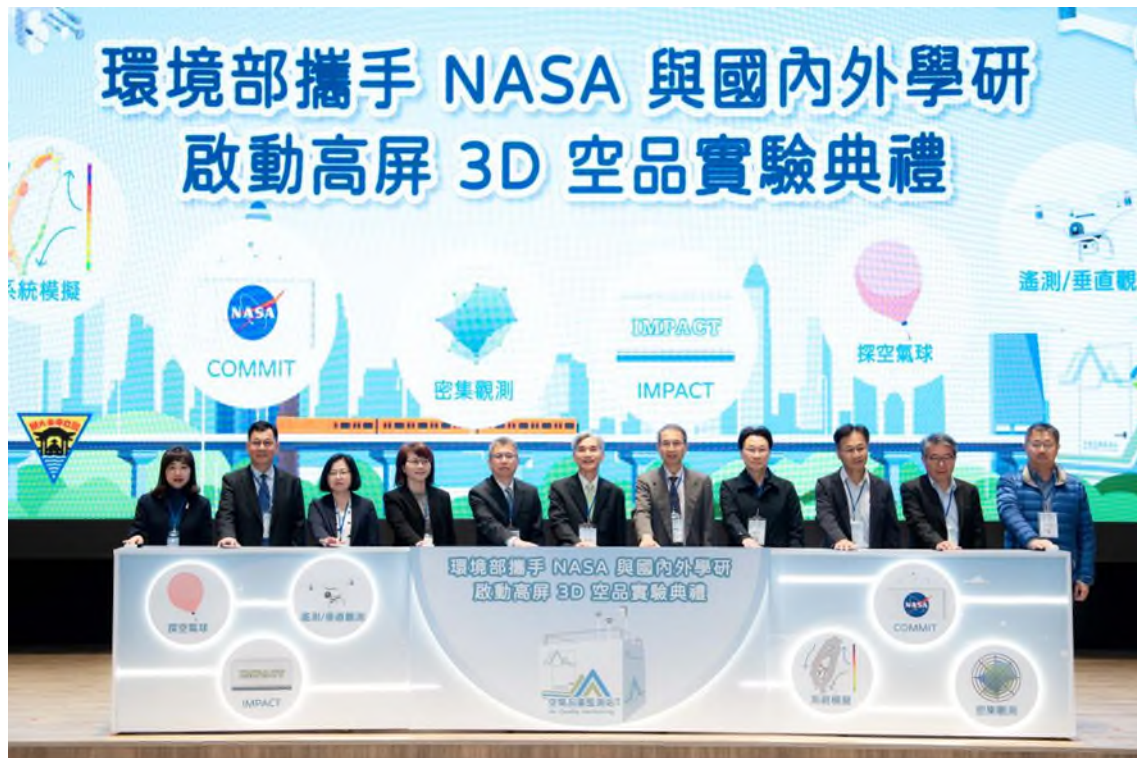
The MOENV deployed drones, sounding balloons, wind profilers, wind LIDAR and sun photometers, all equipped with multifunctional micro sensing and sampling systems to detect the changes of pollutants in atmospheric circulation, to break down and analyze in real time the vertical changes in air pollutants and volatile organic compounds (VOCs). The data collected helps shed some light on how air pollutants, three-dimensional air patterns and topography interact with one another. The data will also be provided to the Taiwan Emission Data System (TEDS) to verify models and improve simulations.

The MOENV pointed out that NASA invited Taiwan, Malaysia, the Philippines, South Korea and Thailand to take part in the Asia air quality experiment in spring 2024, in an effort to gain a better 3D picture of changes in air pollutants across countries and regions. The MOENV is hoping that the cooperation will be expanded to include wider international exchanges of information and technology to investigate dynamic and chemical mechanisms, and the processes through which air pollutants migrate and spread in the atmosphere.

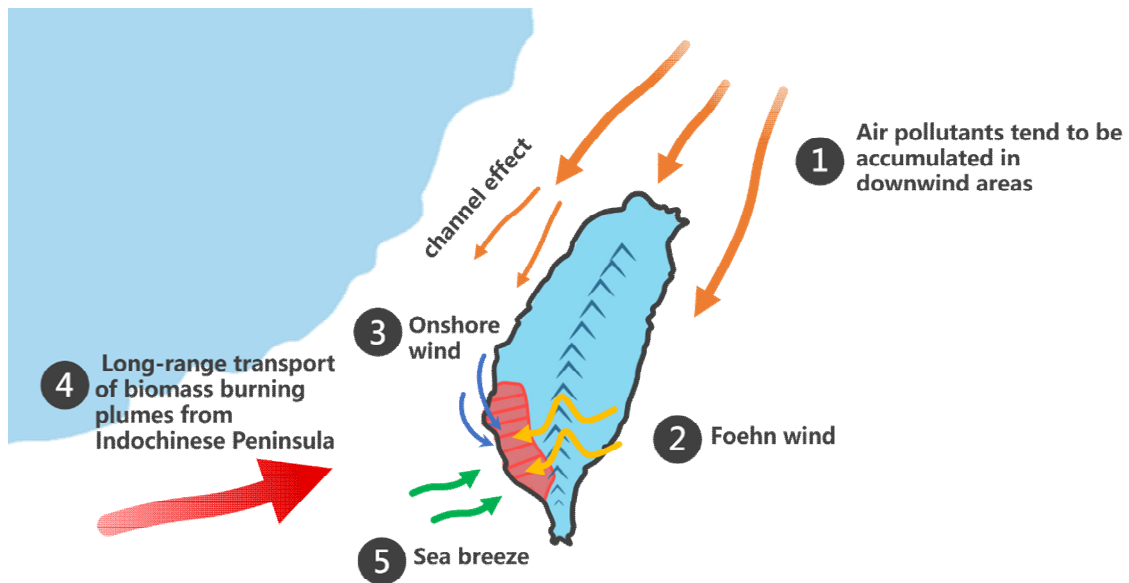
This large-scale study launched by the MOENV will help break down the 3D changes over time along with local air circulation patterns, air pollutant emissions and topography. In addition, it will investigate how secondary pollutants are formed and distributed, study the distribution of long-distance air masses and their mixing and aging processes, and then compare this data with current models to improve simulations and better formulate future control measures. To date, this is Taiwan's largest scale intensive observation research on the atmospheric environment and air pollution. It will integrate scientific results and policy applications, and will serve as a model for further scientific research and international cooperation.



Minister Shieu Fuh-Sheng spoke at the opening ceremony of the cooperation project between the MOENV and NASA



The MOENV joined hands with NASA and international research institutes for the 3D Kaoping air quality experiment



Pollutant circulation map in Kaoping area

Pollutant circulation map for Kaoping area