

Major Environmental Policies

October 2022

1. Feature Article: Promotion of Pathway to Net-Zero Emissions

In recent years, the world has been stepping up its efforts to advocate for net-zero emissions. Taiwan, like many other countries, has been planning a practical pathway to reach net-zero emissions by 2050, and every agency has begun to assess and design possible pathways under the coordination of the Executive Yuan. It is necessary to modify the original 2050 reduction goals in order to expedite carbon emissions with the rest of the world and reach net zero by capping temperature increase at 1.5°C. Therefore, the EPA is currently amending relevant regulations and promoting programs like climate change mitigations and actions for low-carbon, sustainable homeland.

Preface

To strengthen climate actions, the National Development Council (NDC), along with other agencies, announced *Taiwan's Pathway to Net-Zero Emissions in 2050* on 30 March 2022. With energy, industries, lifestyle, and society as focuses for future transformation, technological research and development as well as climate legislation will be the two major governing foundations. Relevant agencies are responsible to promote 12 key strategies, including wind and solar energy, hydrogen power, forward-looking energies, electricity systems and energy storage, energy conservation, carbon capture and storage, electrification and decarbonization for transportation vehicles, resource recycling and zero waste, natural carbon sinks, net-zero emissions and green lifestyle, green financing, and just transformations. The aim is to transform to and build a sustainable society of net-zero emissions by 2050.

The EPA will particularly target resource recycling and zero waste of the 12 key strategies. It hopes to build a generation of resource recycling and sustainability with zero waste, and also promote net-zero emissions and green lifestyle, via product design, resource reuse, industry connections, and technological innovations. Transformation to net-zero emissions by 2050 is a goal that requires consolidated efforts of the entire country as it pertains to global competition and environmental sustainability, which are the new driving forces of Taiwan's long-term development.

(1) Implementation of the first stage of carbon controls

Carbon emission in 2020 is 1.88% less than that of the baseline year (2005), close to the goal set for the first stage of carbon controls (2% decrease). The emission factor of carbon, the amount of carbon dioxide emitted for producing 1 kwh of electricity, had dropped from 0.529kg in 2005 to 0.502kg in 2020.

(2) Revision of the *Greenhouse Gas Reduction and Management Act*

Aiming to step up Taiwan's efforts toward carbon reduction, keep up with a low-carbon economy, and construct a resilient homeland, the Executive Yuan has renamed the *Greenhouse Gas and Management Act* to *Climate Change Response Act* (). Revisions also included various goals and measures to reach net-zero emissions by 2050, such as upgrading and intensifying climate governance, adding articles specifically for climate mitigation, and strengthening emission controls as well as incentive mechanisms to encourage reductions. Others included collecting carbon fees for designated uses, enhancing management mechanism for carbon footprints and also product labeling, and promoting carbon storage through capture.

(3) Management strategies for carbon reductions

1. Promoting inventory, inspection and registration for carbon emissions

The first group of emission sources required to undergo inspection and registration target include those in the power generation, steel manufacturing, oil refinery, cement, semiconductor, and thin film transistor liquid crystal display (TFT-LCD) sectors. They also include factories/plants that annually produce at least 25,000 metric tons of carbon dioxide equivalent (CO₂e). Statistics show that a total of 287 sources in 2020 were required to register their emission amounts for inspection in 2021. In total, they had emitted 223 million metric tons of CO₂e, approximately 78% of Taiwan's total emissions.

Meanwhile, the EPA has announced newly added targets. Manufacturers with factories/plants whose direct emissions from burning fossil fuels and indirect emissions from electricity usage, when combined, reach 25,000 metric tons of CO₂e or more, are required to undergo inspection and registration starting 2023.

On 19 May 2022, the EPA announced the revised directives for taking inventory of carbon emissions. It later held three meetings to explain relevant revised regulations to help small- and medium-sized enterprises understand and conduct inventory. Labor associations of all industries were asked to notify members to attend so that they can learn about inventory of carbon emissions and ascertain their own emissions based on inspection results and cut down emissions accordingly.

Moreover, the EPA is looking to train over 150 inspectors, in hopes of increasing Taiwan's capacity in carbon inspection, with two training sessions already conducted to train inspectors needed in 2022. The aim is to expand Taiwan's current pool of carbon inspectors as an early response to adjustment of carbon regulations and policies and market needs.

2. Facilitating offset programs to encourage voluntary reductions

The *Regulations for Managing Carbon Offset Programs* is in place to facilitate voluntary carbon reductions and offset programs. So far there are 91 offset programs whose proposals have been approved and registered. These diverse reduction measures range from renewable energy generation, replacement of heavy oil with natural gas, switch to variable-frequency motors, increase of efficiency of air-compression systems, adoption of high-efficiency lights and chillers, recycling of methane from livestock farms' wastewater to generate power, and replacement of diesel buses with electric ones. Offset quotas can be applied according to reduced emissions actually achieved in these approved and registered programs. To date, 23.78 million metric tons of CO₂e in total have been issued as offset credits.

3. Utilizing the environmental impact assessment (EIA) mechanism to curb emission increases from development activities

The principle of offsets for increased emissions states that credits are required to be obtained to offset increased emissions after the best available technologies are adopted in the case of construction or expansion of manufacturing zones. Credits are to offset at least 10% of annual increased emissions, and offsets are to be conducted consecutively for ten years. Offsets are mandatory in the following scenarios – developers applying to newly develop, or developed size accumulated has reached 50 hectares or more; setup of new factories/plants; and constructions of, or projects to add facilities in coal-fired or cogeneration power plants that do not use natural gas. As of the end of July 2022, there had been seven development projects having passed the EIA that were required to obtain credits to offset increased emissions based on the principle above.

As replacement of every old motorcycle with an electric one will result in an emission reduction of 2.3 metric tons of CO₂e, the EPA has set up a platform for selling and purchasing reduction benefits as offset credits are generated from these replacements. Applications to procure credits have been filed by Hsinchu Science Park Bureau (HSPB) and Hsinchu County Environmental Bureau, credits from replacing 100,000 motorcycles within two years for the former and those from replacing 400 motorcycles at NT\$2,000/motorcycle for the latter. As of 20 September 2022, a total of 8,460 applications to purchase credits had been filed on the platform.

(4) Actions of climate change mitigation and low-carbon, sustainable homeland

The *National Climate Change Mitigation Action Plan (2018-2022)*, approved by the Executive Yuan on September 2019, focuses on eight areas: capability building and disasters, survival infrastructure, water resources, land use, oceans and coasts, energy supplies and industries, agricultural production and biodiversity, and health. Through cross-agency collaboration, the government can enhance its basic ability to respond to climate change on the whole and integrate and strengthen mitigation results.

The report on implementing the National Climate Change Mitigation Action Plan in 2021 particularly compiled mitigation accomplishments on four key disaster and risk issues. which are extreme precipitation, heat, drought, and rising sea levels. The three teams in charge of environmental quality, accountable consumption and production, and climate actions under the National Council for Sustainable Development (NCSA) held their first team meetings in 2022. The mitigation accomplishments were presented in these meetings before being fully disclosed online for a public inquiry.

2. Experiences and Technologies Exchanged at Taiwan-US E-Waste Network Convention

On 23 September, the EPA held the annual meeting of International E-Waste Management Network (IEMN) online with experts from nine countries participating. Over 100 attendees actively discussed global issues on net-zero emissions, advocated the idea of circular economy toward partner countries in the world, and exchanged relevant experiences and technologies in order to build a net-zero emission, sustainable model for e-waste recycling.

The event was organized jointly with the USEPA. Experts from nine countries, including the US, India, Japan, Argentina, Colombia, Brazil, the Philippines, and Tuvalu, were invited to share the latest trend and status of e-waste controls, through which net-zero emissions could be speedily reached. There were also domestic enterprises displaying results of net-zero emissions, sustainable development, and recycling. It is hoped that developing partner nations could be drawn onto this path through exchanges of domestic and global strategies and leading technologies.

Since 2011, IEMN has been promoted by both the US and Taiwan, helping partner nations establish effective management systems. Taiwan has become a great example for nations to take lesson from for its success in setting up a recycling and disposal system with collections of recycling funds and subsidization as well as over 70% e-waste recycling rate as a technological edge. And IEMN has gradually shifted its emphasis on e-waste recycling and disposal to transformation strategies toward a circular economy in an effort to achieve net-zero emissions and sustainability.

In his opening speech, EPA Minister Tzi-Chin Chang expressed that, because of impacts from climate change, net-zero emissions has become not only the hottest of all strategies in

sustainable development but also an important solution for nations to cope with extreme weather patterns. Answering the call for net-zero emissions, Taiwan announced this year its pathway to reach such a goal by 2050 in which recycling will play a critical role. The EPA has been actively working on recycling since its establishment, thus successfully setting up an infrastructure and formulating policies for the recycling industry. Achievements over the years include the unique fee-collection and subsidization system that extends producer responsibility, the Four-in-One Recycling Program, and the current efforts to promote circular economy. As a result, Taiwan has seen its recycling rate gradually rising to the current level of over 60%. Minister Chang further noted that the EPA has been utilizing innovative ideas for at-source waste reduction and waste reuse. For instance, the new plastic reduction policy mandates that stores should provide discounts for shoppers who bring their own beverage cups, and recycled materials are added to plastic packaging materials. All these have been the result of putting ideas of the new generation into practice and allowing them to become a driving force in environmental protection. Meanwhile, environmental education is facilitated to raise awareness of the public and encourage people to participate so that environmental protection can be implemented with greater ease.

3. Taiwan Shares Achievements at Solid Waste Global Meeting in Singapore

Director Ing-Ing Lai of the EPA Department of Waste Management and Resource Recycling Office led a delegation to attend the 2022 International Solid Waste Association (ISWA) World Congress in Singapore from 21 to 23 September and gave a talk on Taiwan's policies and development of resource recycling. The aim was to facilitate Taiwan's participation in international exchanges and collaboration on resource recycling issues. The 30-plus-member delegation included those from 12 research institutes and enterprises in the waste recycling and reuse industries in Taiwan.

Aligning with the world, Taiwan aims to complete transformation toward net-zero emissions by 2050, and one of the key strategies is resource recycling and zero waste. In 2021, the recycling rates for general wastes and industrial wastes in Taiwan were 62.5% and 85.4%, respectively. Such achievements make up the foundation on which resource recycling is promoted, with sustainable consumption and production, greater efficiency of resource use, and increase of value in waste disposal as the aim. The strategies planned and adopted include green design and at-source reduction, energy and resource reutilization, smooth recycling networks, and innovative technologies and systems. Having been invited to this year's ISWA World Congress, the delegation went on to share Taiwan's various experiences and further connected with other nations by delivering feature speeches and setting up Taiwan Pavilion, which showcased Taiwan's experiences.

With the theme of "Don't Waste Our Future," the 2022 ISWA World Congress invited solid waste experts from around the world to discuss waste recycling, human health, environmental security, etc. Foreign ideas and measures on issues relating to sustainable development and social and economic impacts can serve as important references for Taiwan as it formulates policies. Setting its eyes on net-zero emission, the EPA will actively push for resource recycling and strive to build a zero-waste generation with sustainable resource utilization.

During the two-day event, delegation members participated in meetings and learned about other nations' measures, achievements, and future plans for resource recycling. Moreover, a Taiwan Pavilion was set up by the delegation to showcase the Taiwan government's resource recycling policies and results. Also on display were innovative environmental technologies

utilized by Taiwan’s enterprises, including plastic recycling, reuse, and circulation, production and application of solid renewable fuels (SRF), disposal of hazardous wastes, recycling of heavy metals, incineration, and mechanical electrical maintenance. Besides technological exchanges with enterprises and experts from other countries to keep up with the latest global technological trends, delegation members were able to explore possibilities for future collaboration and discover new business opportunities in resource circulation.



Director Ying-ying Lai (second from left in the front row) and her delegation visit Representative Francis Kuo-Hsin Liang (center in the front row) at the Taipei Representative Office in Singapore



Minister Grace Fu of Singapore Ministry of Sustainability and the Environment (second from left) with the delegation at the exhibition booth

right in the front row) visits Taiwan Pavilion at the ISWA World Congress

4. Imports of Asbestos-Containing Products Banned from 1 May 2023

On 4 October 2022, the EPA announced a ban on importation of asbestos-containing products, to take effect on 1 May 2023 in order to strengthen domestic controls on such items.

Asbestos fiber is extremely minute and insolvent in water. Acute exposure irritates the eyes and skin and causes coughing, while chronic inhalation results in accumulation of asbestos in pulmonary alveoli from which it cannot be removed. Ultimately, it may lead to asbestosis and cancers such as lung cancer. Therefore, it is a global trend to gradually limit and ban asbestos use.

Use of asbestos has been gradually limited since it was first listed as Class 2 toxic chemical substance on 1 May 1989, and from 1 January 2018, it has been banned except for the purpose of research, tests, and education. Following the *Agreement on Technical Barriers to Trade* (TBT) of the World Trade Organization (WTO), the EPA announced that imports of asbestos-containing products are to be banned from 1 May 2023 so as to further limit such items from coming into the country, as well as tighten overall controls within Taiwan. Violators will be fined from NT\$60,000 to \$300,000.

5. 16 Partner Countries Attend 2022 Environmental Education International Workshop - Environmental Management for Sustainable Cities Online

On 5 to 6 September, the EPA held online the 2022 Environmental Education International Workshop - Environmental Management for Sustainable Cities jointly with Global Environmental Education Partnership Asia-Pacific Regional Center (GEEP APRC). Over 160 attendees from 16 countries took part in the event. This is the second consecutive year in which this annual conference has been organized by Taiwan, which called on multiple Asia-Pacific countries and partners to exchange ideas and insights on various environmental issues and sustainable development.

The 2022 conference had the theme of “Environmental Management for Sustainable Cities,” which answered to the call of the 11th UN Sustainable Development Goal, sustainable cities and communities. Participants included experts, scholars, staff in related fields, school teachers, and youth leaders from Japan, South Korea, the Philippines, Malaysia, Thailand, Vietnam, Indonesia, Bhutan, Australia, and Taiwan. Discussions on environmental education over correlations between human society and natural environments were held, and experience and actions during urban development to protect environments were shared. Stories of how regular citizens transformed cities, campuses, and communities to become more environment-friendly via their daily lives within these premises were highlighted.

In the opening speech, EPA Minister Tzi-Chin Chang mentioned that since 2020 Taiwan has been actively promoting living green, which is one of Taiwan’s 12 key strategies in its transformation toward net-zero emissions by 2050. He hoped that instead of underestimating the efforts of an individual, citizens can use their daily actions to motivate industries and the supply ends in the market to make adjustments and pledges in order to cut down the loss of environmental resources.

In addition, Director Tsung-Yung Liu of the EPA Department of Comprehensive Planning shared Taiwan’s experiences in a talk on lifestyles of net-zero emissions through environmental education. Via systematic facilitation, environmental education in Taiwan has been able to

reach more people and groups in diverse and creative manners to promote environment-friendly diets, travels, consumptions, households, and offices, which are important parts of one's daily life.

Of the 31 conference speakers, five were young people from different nations that shared their ongoing environmental advocates and campaigns. The force of the younger generation and creative thinking is considered an important impetus in social development. Equipped with high awareness on environmental problems, the youth leaders not only can introduce these issues to the public, but are not shy to advocate their own beliefs and launch campaigns. Despite the online participation, the audience still had great interactions via streaming messages. Vietnamese singer Phuong Anh was a particularly wonderful surprise as she sang "Green Sounds," a song she wrote during the conference.

The two-day conference displayed the global community's full support and high expectations for the promotion of environmental education. Not only did it help build and strengthen regional and global partnerships, it also led to anticipation for similar collaborations that will lead to more possibilities, facilitate resilience toward environmental changes, and create a better and more sustainable future. More contents and clips of speeches in the conference can be accessed on the GEEP APCR official website (<https://geepaprc.org/zh-tw>).

6. Kinmen Low-Carbon Island Achievements Presented in Forum

The *Building Kinmen Low-carbon Island Plan* has been in implementation for ten years. On 5 September 2022, the EPA and the Kinmen County Government held a forum in Kinmen attended by EPA Minister Chang Tzi-Chin and Kinmen County Magistrate Yang Chen-Wu. Experts and scholars were invited to review and share implementation outcomes and achievements, and brainstorm ways to accelerate towards net-zero green living.

Involvement of the entire citizenry is needed to respond to climate change. Since 2012, the EPA has been implementing the Low-Carbon Homeland Program, including assistance given to Kinmen County to draw up the first and second phases of the *Building Kinmen Low-carbon Island Plan*. Both programs were approved by the Executive Yuan, in 2013 and 2019, respectively. Considering that the second phase plan will be implemented at the end of 2022 and that Taiwan has also just announced its 2050 Net-Zero Emission Pathway, the EPA held this forum to gather relevant ministry representatives, experts and scholars together for discussion. During his speech, EPA Minister Chang said that ten years ago everyone was still very unfamiliar with the concept of "low-carbon island." There were indeed many setbacks in the planning and promotion process. Then, the EPA, Kinmen County and relevant ministries jointly established the Kinmen Low-carbon Island Promotion Taskforce to integrate central and local resources. Through communication and coordination among all parties, people's conceptions gradually changed and key hurdles were overcome, eventually leading to remarkable results.

In the opening speech, Kinmen County Magistrate Yang thanked the Executive Yuan, the EPA and relevant ministries for the long-time assistance and support that allowed Kinmen to address the issues of climate change, energy conservation and carbon reduction, and for helping the county to connect with good friends all over Taiwan, as well as the world, through the term "low-carbon." Over the past ten years, from exploration, trials and adjustments in the first phase, to proactive actions and implementation of relevant tasks in the second phase, the Kinmen County Government has been building up the mitigation and adaptation capacities Kinmen needs in the face of climate change. Magistrate Yang hoped that everyone would look to the future together and deeply root the concept of sustainable development in every corner of Kinmen.

The EPA pointed out that Kinmen County's greenhouse gas emissions are primarily from the sector of commercial and residential buildings, accounting for 36%, followed by the manufacturing and transportation sectors, accounting for 29% and 24% respectively. The major achievements of the second phase of the Kinmen low-carbon island plan include: increase of the share of renewable energy (photovoltaic and wind) power generation capacity to 11.5%; installation of two energy storage systems; installation of high-efficiency generators and the use of waste heat for power generation in Taipower's Tashan Power Plant; installation of smart meters across the island and the establishment of a smart grid demonstration site; replacement of lights in government offices, schools and street lamps island-wide with energy-saving LED's; reutilization of polystyrene marine waste and fishing nets as resources; and continuous improvement of manufacturing processes, replacement and upgrading of equipment, collection and use of methane emitted from wastewater treatment facilities for power generation by Kinmen Kaoliang Liquor Inc. These achievements have not only successfully raised awareness and spurred concrete actions among Kinmen's people regarding energy conservation and carbon reduction, they have also built up local carbon-reducing capacities.

Forum participants spoke on topics such as renewable energy installations and smart grids, vehicle electrification, low-carbon buildings and low-carbon tourism. Minister Chang said that in light of Taiwan's announcement in March this year of the 2050 Net-Zero Emission Pathway and 12 key strategies, he hoped that the third phase of the plan would be aligned in the same direction, thereby facilitating support and promotion by all central government ministries. He also hoped that via communication through the platform of the Kinmen Low-carbon Promotion Taskforce, the central and local governments can work together to advance from low carbon to net zero.

7. Green Points for Premises that Voluntarily Obtain Indoor Air Quality Control Label

In September 2022, the EPA announced the *Principles for Awarding Green Points for Obtaining Indoor Air Quality Voluntary Control Labels*. For premises that are not announced to be regulated yet have obtained the voluntary control label, there is chance to earn 350,000 or 200,000 green points, redeemable for green products or green services.

According to the EPA statistics, as of the end of August 2022 a total of 1,142 premises across Taiwan had obtained the voluntary control label (602 rated "excellent" and 540 rated "good"). Among them, 173 small and medium non-announced premises have been issued the label (118 rated "excellent" and 55 rated "good").

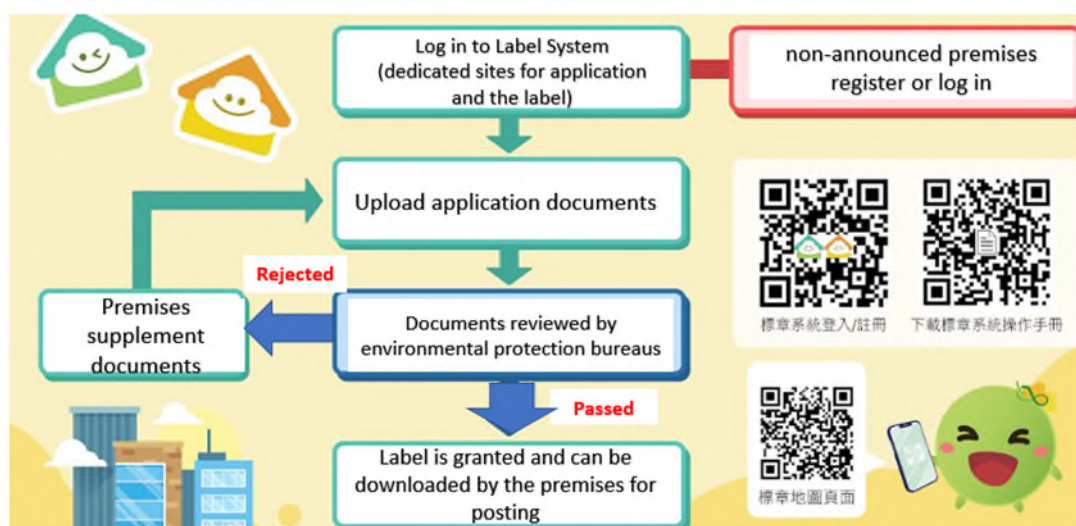
The application process for the voluntary control label was changed to be fully online in August 2022, which has significantly improved convenience for premises. Non-announced premises now only need to prepare relevant documents and do not need to assign dedicated personnel. They are only required to write a maintenance and management plan, test the indoor air quality of their premises, and apply to the environmental protection authority of their jurisdictions. Once approved, they will obtain an excellent or good-rated label in addition to green points. Non-announced premises that obtain an excellent-rated label will earn 350,000 green points, while those that obtain a good-rated label will receive 200,000 green points. After earning green points, the premises can use the GreenPoint APP to collect or redeem points, enjoying commodities or services redeemed with green points while safeguarding the health of all.

Green points can be redeemed fully or partly for daily necessity products to meet food,

clothing, housing and transportation needs. These include products carrying Green Mark, carbon footprint labels, the MIT Smile logo, the CAS label, organic agricultural product labels, and the TAP label. Nearly 2,000 products are available for purchase or redemption. Green points can also be redeemed for vouchers or products at participating chain stores, or for discounts at places such as green restaurants and green hotels. Businesses are also free to use green points as a marketing tool.

Non-announced premises that have obtained the voluntary control label and been issued green points will not have points issued again to them. Green points will be awarded by the EPA to non-announced premises that have obtained the label according to the order of when they have obtained it. The number of green points to be issued is limited. Non-announced premises are encouraged to participate in the upkeep of their public use spaces as early as possible and continue to improve indoor air quality.

Application through the online label system is easy (Indoor Air Quality Website: <https://iaq.epa.gov.tw/indoorair/>)



8. Restrictions on Organotins Tightened to Prevent Abuse

The EPA preannounced the amendment of the *Regulated Toxic Chemical Substances and Matters Concerning Their Handling and Management* (), which will strengthen the management of organotin compounds. In addition to continuing the original controls on activities such as manufacturing, the amendment will prohibit the use of organotin compounds in the manufacture of anti-fouling paints, anti-fouling systems and biocides. The amendment will also give operators a buffer implementation period of one to two years to adjust to the new toxicity classifications of organotin compounds.

The International Convention on the Control of Harmful Anti-fouling Systems on Ships has imposed restrictions on the use of organotin compounds. These compounds were often used in coatings for ships, box nets and other tools to prevent conch, barnacles and other marine organisms from adhering. They were also widely used as biocides such as insecticides and molluscicides. However, these uses also caused organotin compounds to be distributed in water bodies where they would accumulate in shellfish, fish and aquatic organisms. Due to their endocrine disrupting properties, these compounds may cause mutations in aquatic organisms and subsequently harm human health.

Currently, 35 organotin compounds are announced and listed as toxic chemical substances. After referring to international databases and related scientific research, in this amendment the EPA has updated information on these substances by adding the Chemical Abstracts Service Number (CAS No.) of triphenyl- α -naphthyltin, tripropyltin fluoride, tritolytin bromide and tritriphenylstannyl-methane, and adjusted the toxicity classifications of ten organotin compounds, namely tributyltin oxide bis(tributyltin)oxide, triphenyltin hydroxide, tributyltin acetate, tributyltin bromide, tributyltin chloride, tributyltin fluoride, tributyltin hydride, triphenyltin bromide, triphenyltin acetate, and triphenyltin chloride. In addition, the EPA also referenced international management regulations such as those of the United Nations and European Union and revised the prohibited operations and permitted uses of organotin compounds, banning their use in the manufacture of and in the application of anti-fouling coatings or anti-fouling systems. So as to strengthen the source management and ensure their safe use, organotin compounds can only be used in the production of medicines and as polyurethane resins and plastic stabilizers, with the exception of uses for research, experiment and education.

9. Raising Kinmen's Reservoir Water Quality to Share Purified Aquatic Environment with Eurasian Otters

To improve the water quality of lakes and reservoirs in Kinmen County, reduce nutrient pollution and raise the efficiency of purification of water resources, since February 2022 the EPA has been cooperating with Kinmen County, National Cheng Kung University and National Taiwan University of Science and Technology to set up the Kinmen County Multi-soil-layering Pilot Test Site next to Xiaotaihu Lake. Since the start of the site's operation in July 2022, water purification has been effective, thereby contributing to the sustainable development of Kinmen's tourism.

Kinmen County's tourism has developed rapidly and the number of homestays and tourist visits has grown significantly in recent years, making proper treatment of sanitary wastewater a must. Nutrients such as nitrogen and phosphorus were the culprits that caused eutrophication of reservoirs and water quality deterioration in the past. In recent years, the EPA has been cooperating with the Kinmen County Government to gradually build up wastewater intercepting projects and implement pollution control measures. As a result, the amount of household, military camp and livestock wastewater -- the origins of point-source pollution loads of nitrogen and phosphorus -- discharged into Shanwai River have been greatly reduced. Since currently 60% to 70% of the pollution loads of Shanwai River and Taihu Reservoir come from non-point source pollution, innovative methods need to be introduced to further improve the water quality of Taihu Reservoir. Examples include developing and introducing clean water sources upstream from the reservoir, and using the multi-soil-layering (MSL) method to circulate and purify the reservoir water.

The pilot test site uses advanced technologies introduced from abroad. Through layered filter bags that are filled with mixed materials (including sand, iron particles, activated carbon particles, rice straw and other media) and permeable layers of gravel, ten metric tons of lake water can be treated per day. The pilot test system was completed by the end of July 2022, which has effectively improved the water quality of the reservoir. Suspended solids (SS) and total phosphorus have fallen to under 5 mg/L and under 0.05 mg/L, respectively. The system not only prevents wastewater from affecting Kinmen's precious water resources, but also protects the habitat that Eurasian otters rely on.

Executive Director of the Kinmen Wildlife Rehabilitation and Conservation Association Yuan

Shou-Li said that with assistance from the Kinmen County Government and the Society for Wildlife and Nature, efforts to conserve Eurasian otters around Taihu are gradually getting results. Reducing pollution in the Shanwai River has not only ameliorated the reservoir eutrophication problem, but has also helped to conserve Eurasian otter habitat.

The EPA will continue to promote strategies to improve lake and reservoir water quality in Kinmen County. In addition to improving the quality of the water supply, the EPA will commit itself to protecting aquatic habitats and build a quality living environment. It looks forward to realizing the vision of raising Taihu's water quality while building a friendly relationship between Eurasian otters and human living environments, so as to enable Eurasian otters to continue living with ease in the purified aquatic environments of Kinmen.

10. Pollution Site Management Procedures Optimized to Accelerate Amelioration Operations

To achieve better control and management of soil and groundwater pollution sites' amelioration, the EPA has reviewed current technical procedures for pollution sites across Taiwan, as well as the handling processes used when other environmental regulations are involved. Relevant operating guidelines, particularly those concerning review and supervision of sites' amelioration, have been amended to complement relevant operating principles.

To facilitate the amelioration of soil and groundwater pollution sites, align case reviews and verification procedures, and establish guidelines for local competent authorities to implement regular supervision, the *Operating Guidelines for Amelioration Review and Supervision of Soil and Groundwater Pollution Sites* () have long been in effect for competent authorities of different levels to follow when handling relevant cases.

The focus of the amendment was to accelerate the plan review procedures and to integrate the review procedures for the control or remediation projects of soil and underground water pollution sites and for permits involving relevant environmental regulations. It was also to align the current off-site soil treatment and management regulations, to encourage pollution sites to combine the amelioration tasks with green energy adoption, and to enhance the inspection of the sites' implementation of best management practices, so as to provide a basis for the supervision of competent authorities in the future.

In addition, to raise the effectiveness of amelioration tasks and to reduce environmental loads, the amendment added conditions for exempting sites from continual regular monitoring after amelioration tasks are completed. The purpose was to accelerate the delisting of sites and to avoid the delay of amelioration progress or the suspension of amelioration tasks due to circumstances such as lengthy remediation periods and frequent changes to improvement plans, thus achieving the goals of environmental protection and sustainable use of soil resources.

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