



# Environmental Policy Monthly

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## Feature Article

### Minister Lee's Vision of Taiwan's Environmental Work

On 25 May 2016, EPA Minister Ying-Yuan Lee held a press conference where he stressed that environmental work should take public health as guiding principle. Attention will focus on prevention and alert mechanisms to build a sustainable, beautiful and healthy Taiwan. Minister Lee outlined ten main areas for future work and spoke on principles the EPA will follow to deal with environmental issues of the greatest public concern, namely fine particulate matters (PM<sub>2.5</sub>) pollution, environmental law enforcement and international cooperation.

#### President Tsai: Safeguard the Environment and Move toward a Circular Economy

On 25 May, EPA Minister Ying-Yuan Lee held a press conference at which he explained his perspective for EPA policies and priorities. At the press conference Minister Lee pointed out that President Tsai Ing-wen placed much emphasis on environmental protection during her inauguration speech. President Tsai called for tighter controls on pollution of every type, and to turn waste into renewable resources and take Taiwan into an era of a circular economy. She also called

upon the public to pay serious attention to climate change. The EPA will do its utmost to put President Tsai's environmental policies into action.

#### Minister Lee: Ten Main Areas to Improve Sustainability with Prevention a Priority

In line with President Tsai's environmental policies, Minister Lee emphasized that safeguarding public health will be the guiding light for environmental work, placing a focus on prevention and alert mechanisms to build a sustainable, beautiful and healthy Taiwan.

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Minister Lee outlined ten main areas that the EPA will focus on:

1. Creating circular manufacturing and lifestyles based on better integration of energy and resources by recycling and reuse to build a zero waste, low energy consumption, and environmentally friendly society.
2. Implementing waste reduction at source and strengthening the management and tracking of waste clearance and disposal systems: This will be done by strengthening cooperation with law enforcement agencies and heavy penalties on illegal dumping. Management of waste cooking oils and expired food products will also be enhanced, such as by advising food enterprises on how to legally reuse food waste. The EPA will make every effort to prevent such waste or expired products from being consumed.
3. Encouraging and supervising regional cooperation between local governments to deal with household waste disposal problems: To make the general waste disposal resources able to be used more efficiently, the EPA is considering amending current regulations to give the central competent authority the power to allocate waste disposal equipment and facilities such as incinerators to local competent authorities or agencies as required.
4. Promoting a cap mechanism for air pollutant emissions to improve air quality: The EPA will continue to work closely with the Ministry of Economic Affairs, the Ministry of Transportation and Communications, and the Council of Agriculture to find ways to effectively reduce fine particulate matter pollution. Specific measures will include requiring power plants and factories to switch to cleaner fuels for their furnaces, getting particulate filters fitted onto trucks, and stopping farmers from open-air burning of agricultural waste.
5. Enhancing industrial wastewater management and reuse: The EPA will continue to promote the collection of water pollution control fees and assist livestock enterprises in turning animal wastes into an energy source. In addition, the clean-up and restoration operation following the *T.S. Taipei* container ship oil spill will be accelerated, and compensation will be sought from the owners.
6. Enhancing toxic substances management: The remediation of contaminated sites will be sped up; the management of toxic chemicals and environmental agents will be tightened to gain a clearer picture of how they are used and disposed of. The tidiness of residential areas will also be further improved to eliminate mosquito breeding grounds and prevent outbreaks of dengue fever.
7. Implementing the Paris Agreement: The EPA will intensify its efforts to formulate related regulations on greenhouse gas reductions to comply with the Paris Agreement. The EPA will also raise the visibilities of product carbon labelling and the Green Mark to promote green procurement and consumption.
8. Improving environmental impact assessment (EIA) mechanisms: The EPA will request developers to consider EIA factors and communicate with stakeholders during the investment evaluation stage rather than afterwards. The EPA will be requesting developers and the industry competent authority to fulfill their obligations conscientiously so as to improve the effectiveness of EIA reviews.
9. Enhancing environmental education and international cooperation: The EPA will enhance environmental education and establish more channels and mechanisms for public participation to facilitate the efforts of civil society to protect the environment. In addition, the EPA will put more effort into international cooperation and share with other nations Taiwan's environmental technologies and experiences, as part of Taiwan's responsibility as a member of the global village.
10. Preparing for the establishment of the Ministry of Environment and Natural Resources: The EPA will continue to strive toward the establishment of the Ministry of Environment and Natural Resources that will bring together environmental protection, natural resources conservation and ecosystem preservation tasks under one roof and enhance the efficiency of environmental work.

## Responses to Issues of Public Concern

Minister Lee made statements on the environmental issues of greatest public concern:

1. Lowering PM<sub>2.5</sub> to protect public health



▶ *Minister Lee explains the EPA's vision and goals at a press conference.*

The public is very concerned about PM<sub>2.5</sub> air pollutants and Minister Lee indicated that having clean air for people to breathe would be the most urgent issue. Since the PM<sub>2.5</sub> problem is particularly evident in central Taiwan, partly due to large amounts of coal burned by thermal power plants, the EPA will continue to work with the Ministry of Economic Affairs to reduce electricity generation from coal and to effect a transition to using cleaner natural gas. The EPA estimates that one coal-fired generator will be replaced every 2 years, with priority being given to the Taichung area to reduce sulfur and soot emissions. Minister Lee also called upon experts to assist in developing low-sulfur, high-energy coal so that PM<sub>2.5</sub> concentrations can drop to 15 µg/m<sup>3</sup> or less compared to the 22 µg/m<sup>3</sup> at present.

2. Creating a strong triangle for environmental protection composed of environmental groups, judicial agencies, and government agencies

Taiwan has a fair number of environmental groups that contribute much to, and are often at the forefront of, environmental protection efforts. The EPA will work to strengthen cooperation among environmental groups, judicial agencies, and government departments to create a strong triangle of environmental protection, and so that complaints or reports filed by environmental groups lead to quicker action.

3. Work with other nations to protect the global environment together

As Minister Lee pointed out, many environmental problems – such as the smuggling of electronic waste and long-range transboundary air pollution – need international cooperation to be solved. The EPA will continue looking for opportunities to cooperate with other nations on protecting the global environment.

## Environmental Education

### EPA Co-convenes Global Environmental Education Partnership Executive Committee Meeting in UK

In recent years the Taiwan and the US EPAs have been jointly promoting the Global Environmental Education Partnership (GEEP), and this year's GEEP executive committee meeting was held from May 30-31 in Bristol, UK. The meeting was attended by 16 environmental education experts – from both governments and NGOs – representing 10 nations. They convened to discuss how to administer GEEP and models for cooperative

exchanges between participants. The delegates hope to build a network of environmental education exchanges that will help to stimulate the development of environmental education worldwide. The UK partnership plan that is a part of GEEP was also formally unveiled at a ceremony held on 31 May in Bristol. Director of the Taipei Representative Office in the UK, Envoy Shyang-Yun Cheng, and the Director of the EPA's Department of Comprehensive Planning, Tsung Yung Liu, gave speeches at the ceremony.

The Global Environmental Education Partnership Executive Committee Meeting was held from 30-31 May 2016 in Bristol, UK. The 16 government officials and NGO experts came from 10 nations: Taiwan, Australia, Botswana, Japan, Kenya, Netherlands, New Zealand, the United Arab Emirates, the UK, and the USA. One of the experts was an official from the United Nations Environment Programme (UNEP), nine were from various NGOs, and the other six were government officials. The experts came together to discuss how to administer GEEP and models for cooperative exchanges between participants, and are striving to build a network of environmental education exchanges that will help to stimulate the development of environmental education worldwide.

The UK partnership plan that is a part of GEEP was also formally initiated at a ceremony held on 31 May in Bristol. Envoy Cheng remarked on the significance of the initiation ceremony being held in the UK, which has always been keen on protecting the environment and has been home to many of the world's renowned environmentalists, including Prince Charles, Prime Minister David Cameron, and Charles Darwin, the author of "the Origin of Species."

As Director Tsung Yung Liu pointed out in his speech, the launch of the UK partnership and the holding of the Global Environmental Education Partnership Executive Committee Meeting demonstrated the close cooperative relationship among Taiwan, the US and other partner nations. Director Liu also expressed the common hope that environmental education concepts will spread to other nations around the world, and went on to describe Taiwan's experiences and achievements in promoting environmental education. US EPA environmental education expert Ginger Potter praised Taiwan's successes in environmental protection and education. Judy Braus, executive director of the North American Association for Environmental Education (NAAEE) adopted a dynamic approach to explain how environmental education goes beyond national boundaries, and expressed the hope that having the UK partnership on board would help stimulate and amalgamate environmental education capacity worldwide, move environmental education up the agenda in all nations, and raise environmental consciousness among people everywhere.



▶ *Director of the EPA's Department of Comprehensive Planning Tsung Yung Liu (front third from left) with delegates to the Global Environmental Education Partnership Executive Committee Meeting*

## EPA Marks World Environment Day with Call for more Protection of Environment and Wildlife

The 5th of June is World Environment Day, the biggest day of the year in terms of global environmental events. Taiwan is a responsible member of the global community, and so on 5 June the EPA and the Taoyuan City Government, with assistance from the Council of Agriculture and the Water Resources Agency of the Ministry of Economic Affairs (MOEA), jointly held a 2016 World Environment Day Event at Shimen Reservoir. EPA Minister Ying-Yuan Lee, Taoyuan City Mayor Wen-Tsan Chang, Director General Tao-Sheng Lee, of the Council of Agriculture's Forestry Bureau, and Director General Ruey-Der Wang of the Water Resources Agency, declared their commitment to environmental protection and urged the public to do the same. They also called for more attention to environmental and ecosystem protection, as well as increased awareness and action to protect wildlife.

The theme of this year's World Environment Day was "The Fight Against Illegal Trade in Wildlife." However, the illegal trade of wild animals and plants in Taiwan is quite rare. A bigger problem is the disruption to, or destruction of, ecologies and food chains in Taiwan. Due to economic activity, the natural ecosystem and food chains have been changed or damaged. The EPA thus chose the theme of "Protect Ecosystems and Wildlife" for the event, which was jointly held with the Taoyuan City Government and with assistance from the Council of Agriculture and the MOEA's Water Resources Agency. The EPA hopes that bringing in other ministries and local governments will spread the

message more effectively and help to build a safe and prosperous low-carbon, sustainable future for Taiwan.

World Environment Day is also the anniversary of the promulgation of Taiwan's *Environmental Education Act* (環境教育法). As a result of the implementation of this Act, Taiwan currently has 134 accredited environmental education premises that provide a wide variety of environmental learning opportunities to the general public. One such EPA-certified location is Shimen Reservoir, which is why the EPA and Taoyuan City Government chose it as the site for kicking off a series of events under the title Fun



▶ EPA Minister Ying-Yuan Lee (center) with members of the public in an interactive environmental education activity

Summer – Taoyuan Environmental Education Season. These events will be held at ten locations in Taoyuan, and will offer a wide variety of hands-on experiences and special deals to encourage the public to go outdoors and get a feel for the natural environment. In

addition to the hands-on activities, classes will also be available that will disseminate knowledge and skills for protecting the environment.



▶ EPA Minister Ying-Yuan Lee (third from right) visits an interactive environmental education booth with Director General Ruey-Der Wang of the Water Resources Agency, Ministry of Economic Affairs (second from right)

## Air

# EPA Allocates NT\$4 Billion for Local Government Air Quality Measures

The public is becoming increasingly concerned about the problem of fine particulate matter (PM<sub>2.5</sub>) in the air. EPA Minister Ying-Yuan Lee has stated that all air quality control work should take public health as its starting point. With this in mind, the EPA will allocate NT\$4 billion over the next two years toward assisting local governments bring about large improvements in air quality. Specifically, the EPA is aiming for a 20% reduction over the next two years in the number of red alert days (PM<sub>2.5</sub> concentrations of over 54 µg/m<sup>3</sup>) recorded by air quality monitoring stations in every city and county, and a 50% reduction within four years.

Addressing public concerns over PM<sub>2.5</sub> pollution, EPA Minister Ying-Yuan Lee has stated that all work being done on air quality control should take public health as its starting point. The EPA is now working hard to make this happen. The time period for implementing the already-approved Clean Air Action Plan will be shortened from six years to four years. In addition, targets for air quality improvement will be established. Cooperation between central and local governments will be strengthened and the necessary amount of money will be allocated to ensure that the

air quality targets are achieved.

Minister Lee has set two targets for air quality improvement:

1. Reducing the number of air quality red alert days

Over the next two years the number of red alert days (PM<sub>2.5</sub> > 54 µg/m<sup>3</sup>) recorded by air quality monitoring stations in every city and county must be reduced by 20% – and by 50% within four years – to significantly

reduce the chances of residents being exposed to the dangers of PM<sub>2.5</sub>. Performance in meeting these targets will be a major factor in the evaluation of air quality improvement achievements, particularly in areas that have not reached air quality standards, and for deciding the amount of subsidies local governments are eligible for.

2. Increasing the allocation of funds to strengthen cooperation between central and local governments

The EPA is encouraging local governments to get involved in the work of improving air quality by putting forward air pollutant emission reduction plans that are tailored to meet local needs and conditions. If the plans are approved after evaluation then the EPA will subsidize two-thirds of the cost of implementation, and the subsidy can also be adjusted according to changing demands. The EPA will spend NT\$4 billion over the next two years to assist local governments with improving air quality.

## Water

### Amendments to Marine Dumping Fees Collection Regulations Announced

To help maintain oceanic environments by upholding the polluter pays principle, on 19 May 2016 the EPA announced amendments to the *Marine Dumping Fees Collection Regulations* (海洋棄置費收費辦法). Made after examining current international practices, the amendments clearly delineate fee-paying obligations for dumpers of waste at sea.

In order to maintain safe passage in Taiwan's ports, port areas and the routes in and out of them must be regularly dredged. The silt and mud removed by dredging, however, is dumped out at sea. The EPA firmly believes that polluters should pay for using the ocean as a final disposal site, and has thus developed regulations to require the collection of fees for marine dumping. The EPA hopes that this economic incentive will encourage operators to look for other means of waste disposal that have a lower impact on the environment.

To ensure the feasibility of collecting fees and to adhere to rules on simplifying government administration and making life easier for the public, the EPA has amended the *Marine Dumping Fees Collection Regulations* in accordance with Article 12

Paragraph 1 of the *Marine Pollution Control Act* (海洋污染防治法).

The amendments involve: definitions of terms in the fee rates and volumes of dumped materials (Article 2); fee calculation methods (Article 4); fee rates for every type of dumped substance (Article 6); and fee payment methods and auditing by the competent authority (Article 7). The date for fee collection to begin has been set as 1 July 2016 (Article 8).

All the marine dumping fees collected will in the future be automatically paid into the Water Pollution Control Fund, a special fund administered by the central competent authority. Money from this fund will be used for the control, monitoring and treatment of marine pollution, and other marine environmental protection related research and training.

## Water

### Water Quality Standards for Groundwater Injection Amended

On 12 May 2016, the EPA announced the amendments to the *Water Quality Standards for Injection Treated Wastewater into Groundwater Bodies* (污水經處理後注入地下水體水質標準) as a part of overall controls on substances harmful to human health. The amendments were made in accordance with Article 36 of the *Water Pollution Control Act* (水污染防治法) regarding criminal penalties for violators. The amendments also added substances that are harmful to health to be controlled to prevent unscrupulous operators from injecting

wastewater that contains harmful substances in concentrations exceeding water quality standards for water injected into a groundwater body.

The *Water Pollution Control Act* was amended on 4 February 2015. Article 32 Paragraph 1 states that wastewater or sewage may not be injected into a groundwater body or discharged into soil. Article 36 also states that any person held responsible for injecting wastewater that contains harmful substances in concentrations exceeding any limits covered in the *Water Pollution Control Act* into groundwater shall face punishment up to a maximum of three years imprisonment. To make enterprises that illegally inject wastewater subject to criminal penalties, the regulations have been amended and retitled as *Water Quality Standards for Groundwater Body Injection and Types and Limits of Harmful Substances* (注入地下水體水質標準及有害健康物質之種類、限值)

The main points of the amendments are as follows:

1. Details of controls on 21 harmful substances and their maximum limits have been added in order to strengthen the requirement under Article 32 of the *Water Pollution Control Act* that wastewater must be treated to designated standards in accordance with

the environmental risk assessment results and does not contain harmful substances. The newly added items and their limits are shown in the table below.

2. As a general risk management principle the following substances should not be present in wastewater:

- Group 1, Group 2A and 2B carcinogenic substances as listed by the International Agency for Research on Cancer
- Group 1 carcinogenic, mutagenic and toxic for reproduction substances as stated in the Ministry of Labor's list of priority control substances

The amendments are designed to prevent illegal behavior and heavily penalize unscrupulous operators that inject wastewater into a groundwater body. Anyone caught polluting soil or groundwater may be prosecuted and could be sentenced up to five years in prison.

▶ *Maximum limits for 21 harmful substances (in mg/L; except dioxins in pg I-TEQ/L)*

Item	Maximum limit	Item	Maximum limit
Indium	0.07	Ethylbenzene	<0.001
Molybdenum	0.07	Formaldehyde	<0.4
Tetrachloroethene	0.005	Dimethyl phthalate (DMP)	<0.005
Dichloromethane	0.02	Diethyl phthalate (DEP)	<0.005
1,2-Dichloroethene	0.07	Di-n-butyl phthalate (DBP)	<0.005
Dioxins	3	Butyl benzyl phthalate (BBP)	<0.005
Beryllium	<0.005	Di-n-octyl phthalate (DNOP)	<0.005
Cobalt	<0.01	Di(2-ethylhexyl)phthalate(DEHP)	<0.005
Gallium	<0.02	Nitrobenzene	<0.005
1,2-Dichloroethane	<0.00155	Total toxic organics (TTO)	<0.006
Trichloromethane	<0.001		



## Environmental Inspection

## Science Park Factories Implement EIA Decisions by Recycling Wastewater

The EPA is constantly supervising and auditing large factories in science parks to ensure that they are living up to their environmental assessment pledges, such as recycling wastewater. From April 2015 to the present, there have been noticeable improvements. EPA statistics show that the amount of wastewater recycled by large factories in science parks has reached 429,780,187 tonnes annually, a volume large enough to supply the whole country with 2 months of household water. The EPA will continue to refine its auditing and inspection techniques to ensure that all enterprises fulfill each of their environmental assessment pledges. Needless to say, violators will be penalized according to the law.

The results from the 65 enterprises in the three science parks show that all of them are keeping to the pledges laid out in their environmental assessment pledges. The minimum total amount of wastewater pledged to be recycled is 395,954,285 tonnes annually. The actual recycled volume was 429,780,187 tonnes annually, more than the EPA had expected.

Looking at this in terms of its contribution to society, the water saved is equivalent to 171,912 Olympic-size swimming pools, enough to irrigate 2,978 hectares of rice paddies or provide water to all of Taiwan's households for 73 days.

There have been frequent serious droughts in different parts of the world in recent years and Taiwan's natural water resources are also under pressure. In addition, legal requirements for water recycling and reuse are still insufficient and the best methodology for inspecting and auditing water recycling efforts has yet to be determined. All these factors combined means that Taiwan is facing a water crisis. To overcome these three major issues, the EPA is seeking out the best administrative tools, of which environmental impact assessment (EIA) is one. Knowing that each case is

different, the EPA is asking enterprises to recycle a certain percentage of wastewater to promote effluent reduction at source as well as water conservation. The EPA also established an auditing program that was administered throughout 2015 in all science parks to determine wastewater recycling rates. Revolutionary EIA decision enforcement methods also helped improve the management of water resources.

To find out how developers comply with their EIA pledges on wastewater recycling, the EPA has developed its own auditing and inspection methods. Before planning the auditing regimen the EPA invited experts in related fields to teach courses and give specialist training on water recycling and reuse to EPA inspectors. Meetings between the experts and government agencies were also held to research and discuss the content of a handy reference manual for use in the field. The compiled manual includes information on inspection site selecting, parameters, and calculation and inspection methods.

Constant supervision and auditing of large factories will thus allow for more of Taiwan's precious water to remain in reservoirs and be allocated effectively, leaving more for agricultural and household use.

## EIA

## Two EIA Operating Rules Amended to Encourage Public Participation

To implement the requirements of the *Environmental Impact Assessment Act* (環境影響評估法), the EPA has announced amendments to the *Operating Rules for Environmental Impact Assessment Public Hearings* (環境影響評估公聽會作業要點) and the *Operating Rules for Environmental Impact Assessment Public Explanatory Meetings* (環境影響評估公開說明會作業要點). The protocols cover procedures for the industry competent authority and developers to follow when holding public hearings and explanatory meetings; the amendments are designed to bring more clarity to the procedures and make them more consistent with existing regulations regarding information disclosure and public participation.

On 12 May 2016, the EPA announced amendments to two sets of environmental assessment operating rules. One of them is the *Operating Rules for Environmental Impact Assessment Public Hearings*, as required by Article 12 of the *Environmental Impact Assessment Act*, and also in response to amendments announced on 3 July 2015 to Articles 20 and 26 of the *Environmental Impact Assessment Act Enforcement Rules* (環境影響評估法施行細則). The other is the *Operating Rules for Environmental Impact Assessment Public Explanatory Meetings*, as required by Article 7 Paragraph 3 and Article 8 Paragraph 2 of the *Environmental Impact Assessment Act* and also in response to amendments announced on 3 July 2015 to Articles 20 and 22 of the *Environmental Impact Assessment Act Enforcement Rules*.

The amendments to the two sets of operating rules cover who is to be informed about the public hearings and explanatory meetings, what locations can be considered suitable, and how the meetings should be convened.

The main points of the amendments are as follows:

1. Who is to be informed about public hearing/explanatory meetings and what locations can be considered suitable have been clarified: The

amendments clearly stipulate the government agencies, experts, scholars, and civic groups that should be invited. Further explanation of suitable locations for meetings, as approved by the competent authority, has been added.

2. To safeguard full public participation, all public hearings must allow written suggestions to be submitted by stakeholders who are unable to attend in person. Such suggestions should be replied to by the industry competent authority or developer and recorded in the minutes of the meeting.

3. The role of the chairperson of the public hearing/explanatory meeting has been clarified.

4. "Conclusions" has been added as a necessary session of the agenda for a public hearing/explanatory meeting.

5. Methods of dealing with raised objections and the minutes of the public hearing/explanatory meeting have been added: The comments given by participants and any suggestions concerning the minutes of the meeting must be replied to by the industry competent authority or developer. The restriction stating that a participant or industry competent authority has to give comments within a set period of time has been removed so as not to restrict the public's freedom of expression.

## Toxic Substance

# Phase 1 Existing Chemical Substances Registration Completed

From 1 September 2015 to 31 March 2016, the EPA conducted Phase 1 registration of existing chemical substances as required by the *Regulations Governing New and Existing Chemical Substances Registration* (新化學物質及既有化學物質資料登錄辦法). Every enterprise that has on average over the past three years imported or manufactured over 100 kg of existing chemical substances annually has had to submit reports within the stated deadline. Over 25,000 types of existing chemical substances are now registered with the EPA.

The registration of existing chemical substances is crucial for building up a complete database on these chemicals. The register will be used as a reference for evaluating which substances will be announced by the end of 2017 as part of the first batch of chemicals that should be registered through standard registration, and also for the later

work of determining toxic chemical substances that need to be controlled.

The EPA launched the chemical substance registration system on 11 December 2014. A common registration platform was co-established by the EPA and the Ministry of Labor (MOL). On 8 September

2015 the MOL announced a list of 101,089 existing chemical substances. In accordance with legal requirements, the EPA asked all enterprises that imported or manufactured over 100 kg of existing chemical substances annually to abide by Phase 1 chemical substance registration from 1 September 2015 to 31 March 2016. During this period the EPA received over 10,000 submissions and checked more than 156,000 separate items of information. Analysis showed that over 25,000 substances were registered, of which the top use was for purposes at industrial sites (37.27%), followed by usage for formulation (32.48%).

The EPA is evaluating which substances will be announced by the end of 2017 to be the first batch of chemicals that should be registered through standard registration. Details of these chemicals need to be submitted according to volumes and tonnages stated in the regulations. The information to be submitted includes hazard category and labeling, physical and chemical properties, and safety information. Those chemicals that are evaluated to be toxic will be announced as toxic chemical substances and subject to be controlled.

## News Briefs

### Amendments to Ceramic Industry Air Pollutant Emission Standards Preannounced

The EPA formulated and promulgated the *Particulate Pollutant Emission Standards for Spray Dryers in the Ceramic Industry* (陶瓷業噴霧乾燥機粒狀污染物排放標準) in 1993. The standards have remained largely unchanged since then, with the exception of amendments made in 1999 to have emission standards conform to the *Air Pollution Control Act* (空氣污染防治法). The EPA reviewed and revised the standards in view of the fact that in recent years the technology for waste gas treatment in the ceramics industry has greatly improved in other countries, and that over 70% of particulate pollutants from the ceramics industry consist of PM<sub>2.5</sub> pollution, which can be easily inhaled and pose health risks. After taking into account international control standards, the current state of emissions in Taiwan, feasible technologies and cost-benefit analyses, the EPA preannounced the draft amendments to the *Ceramic Industry Air Pollutant Emission Standards* (陶瓷業空氣污染物排放標準) on 24 May 2016. The amendments aim at reducing the emission of fine particulate matters and fluorine compounds.

As per the EPA, the main points of the amendments include:

- (1) In accordance with the characteristics of ceramics manufacturing processes, drying equipment and the firing kilns are also included in the scope of control, in addition to the original spray dryers;
- (2) The threshold for production scale is established to exclude industries whose annual production design or actual production is less than 100 tons. In this way, small personal studios are not subject to the revised standards.
- (3) Particulate pollutant emission standards are tightened. The emission limit for new sources of pollution are tightened from 100 mg/Nm<sup>3</sup> to 30 mg/Nm<sup>3</sup>, whereas the limit for existing pollution sources are tightened to 50 mg/Nm<sup>3</sup>.
- (4) The emission standards for fluorides are to be set at 5 mg/Nm<sup>3</sup>.

### Training and Management Regulations for Dedicated Environmental Personnel and Technicians Announced

To integrate and make the relevant regulations for the training of environmental protection personnel and professional technicians consistent, the EPA coordinated with the Ministry of the Interior, the Ministry of Education, the Ministry of Economic Affairs, the Council of Agriculture, the Ministry of Health and Welfare and the Ministry of Science and Technology to jointly announce the *Training and Management Regulations for Dedicated Environmental Protection Personnel and Professional Technicians* (環境保護專責及技術人員訓練管理辦法). The new regulations contain 30 articles. Common matters pertaining to training, qualification, as well as issuance, revocation and cancellation of certificates have been converged.

Prior to the joint announcement, there were five different sets of establishment and management regulations pertaining to dedicated environment protection units or personnel, dedicated indoor air quality management personnel, waste clearance and disposal professional technicians, environmental agents, professional technicians, and soil contamination assessment and survey specialists. As these five sets of regulations were formulated at different times and under different backgrounds, and many common matters, such as the training methods and the issuing or cancellation of certificates also vary. Through interministerial coordination, the newly announced regulations reconcile the differences in the previous ones and revise or add part of their contents in accordance with practical needs. In addition to clarifying legal terms, the new regulations concern trainee requirements, time for review of qualifications, revocation of certificates, uniformity of the time span for the re-application of certificates, and orientation trainings. From now on, the training of dedicated environmental protection personnel and professional technicians shall be simplified and more unified.

## Bottom Sediment Assessment Review and Pollution Improvement Plan Approval Rules Announced

In 19 May 2016, the EPA announced the *Rules for Bottom Sediment Assessment Review and Pollution Improvement Plan Approval* (底泥評估結果審核及污染改善計畫核定要點) comprising eight articles. In accordance with the *Soil and Groundwater Pollution Remediation Act* (土壤及地下水污染整治法), the central competent authority should review the environmental impact, health risks, available technology and economic benefits assessed by the manager of the surface water body. If the assessment results find remediation efforts necessary and feasible, the surface water body management personnel should then propose a pollution improvement plan, which would be implemented upon approval by the central competent authority. In the announced rules, stipulations are made regarding the procedures for the review of assessment results and evaluation of pollution improvement plans, as well as the operation period and the correction period thereof. Once approved, all the information will be made public.

## Second Batch of Premises Subject to Indoor Air Quality Act Preannounced

Empowered by Article 6 of the *Indoor Air Quality Act* (室內空氣品質管理法), and after comprehensive consideration of crowd capacity, entry and exit capacity, risks posed by indoor air pollutants and other special needs of private and public premises, the central competent authority announced batch by batch the premises that should comply with the *Indoor Air Quality Act*. The first batch of such premises was announced by the EPA on 23 January 2014 and went into effect starting from 1 July 2014 in accordance with legislative authorization. The second batch of the premises that should comply with the *Indoor Air Quality Act* was preannounced on 10 May 2016 for public comments.

The second batch of premises listed in the draft includes: colleges and universities, libraries, museums and art museums, medical institutions, social welfare institutions, government institution offices, railway and transportation stations, civilian airports, mass transit system terminals, business operation sites for financial institutions, performance halls, exhibition rooms and conference halls, cinemas, KTV/MTV premises and shopping malls. Altogether about 500 premises in 15 categories are listed.

### ▶ Second batch of premises subject to Indoor Air Quality Act and air pollutants on controlled list

Category	Premise	CO	CO <sub>2</sub>	Formaldehyde	Bacteria	PM <sub>10</sub>
Colleges and universities	Main library		●	●	●	●
Libraries	City or county libraries		●	●	●	●
Museums	Large museums		●	●	●	●
Medical institutions	Regional hospitals (adding their dining areas)		●	●	●	●
Social welfare institutions	Elderly care centers	●	●	●	●	●
Government agencies	Central government agencies		●	●		●
Transportation stations	Railway stations	●	●	●		●
	Civilian airports		●	●	●	●
	Metro stations	●	●	●		
Business operation sites for financial institutions	Headquarters		●	●		●
Performance halls	Opera house		●	●	●	●
Exhibition rooms	Large-scale exhibition rooms such as at the Taipei World Trade Center		●	●		●
Cinemas	Cinemas	●	●	●		●
KTV/MTV premises	KTV/MTV premises	●	●	●		●
Shopping malls	Department stores (adding their dining areas)	●	●	●		●

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