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Feature Article

Environmental Devotees Awarded on World Environment Day

5 June is World Environment Day. On 5 June 2017, the EPA held the ceremony for the 5th National Environmental Education Awards ceremony, which also honored outstanding Water Patrols of 2016. Six categories of awards were given out by EPA Minister Ying-Yuan Lee to encourage and honor awardees' hard work. Minister Lee especially expressed his respect and appreciation to each individual and organizations nominated for the National Environmental Education Award as well as more than 10,000 community patrol members for their efforts and diligence in creating a wonderful living environment.

National Environmental Education Awards

To promote environmental education for all citizens, the EPA announced the *National Environmental Education Awards Rewarding Regulations* (國家環境教育獎獎勵辦法) according to the *Environmental Education Act* (環境教育法) on 5 January 2012. The National Environmental Education Awards are divided into six categories: private enterprises, schools, government agencies, non-governmental organizations, communities, and individuals.

To promote environmental education at the local level, local governments are in charge of the preliminary reviews and honoring those with high scores in the preliminary reviews. Up to three top places in the categories of private enterprises and government agencies, along with the first place in other categories (non-governmental organizations, schools, communities, and individuals), are then sent to the EPA for second and final evaluations. Only one candidate is chosen as "excellent" in each category. A trophy will be given to all the award recipients. In addition, cash prizes of NT\$1 million will be given

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to winners of non-governmental organizations and communities, and NT\$100,000 for the individual winners. In addition, up to six "Outstanding" awards will be given in each category with cash prizes as well.

The EPA emphasizes that the awards are given to honor those dedicated to the promotion of environmental education and also to enhance awardees' social impacts. The EPA hopes the awards will inspire others to join in the efforts of environmental education by learning relevant skills and knowledge, taking actions, and shouldering their social responsibilities.

National Environmental Education Awards Enter the Fifth Year

For years the EPA has been devoting to environmental education at the root level. To encourage public participation and also honor the contribution of individuals and organizations to environmental education, the National Environmental Education Awards have been given out for five years consecutively and earning praises from environmental educators in Taiwan.

This year's Excellence Awards were given to Kenting National Park, Hair O'right Int'l Corp., Tzu Chi University of Science and Technology, Taiwan Milkweed Butterfly Ecological Conservation Organization, Houbu Community Development Organization, and Secretary-General Yin-Tien Su of Chiayi County Ecological and Environmental Preservation Organization for organizations.

During the awards ceremony, Minister Ying-Yuan Lee paid the highest respect and conveyed his gratitude to all nominated individuals and organizations. He pointed out that all nominees were selected for their outstanding performance in the preliminary and the second and final reviews and that their efforts in environmental education were great examples for others to follow. With a hand gesture symbolizing "love", he further congratulated the winners for their great contributions that achieved the mission of creating a wonderful living environment.

All individual nominees excel in their own professional fields while showing great care for the environment. Their endeavors in documenting the environmental

changes in Taiwan have given voice for the natural environment and become a part of the heart-touching history of environmental protection. As the conditions of a community can reflect whether the local environment is good or bad, communities in Taiwan have always stayed ahead in promoting environmental protection and education.

For the category of organizations, the candidates have been dedicated to local environmental issues with actions for years by combining surrounding resources and civic scientific strengths. The nominees in the category of schools focus on students' learning with assistance from instructors by systematically guiding students to research and solve various environmental problems. For example, agricultural waste such as rice straw are used to create a proactive self-learning campus.

This year's enterprise candidates include members of enterprises of the technology industry, farmers' associations, the restaurant industry, manufacturing, and hospitality industry. For the category of government agencies, five out of six nominees have become certified facilities for environmental education on the unique rock oyster ecosystem in offshore island counties, astronomical observation, prehistoric culture, ecological conservation, and natural resource management. Surrounding neighborhoods are also inspired to take up and promote local ecological and environmental conservation, which further displayed government agencies' determination and influence as activists for environmental education.

The EPA stated that the National Environmental Education Awards are given to honor top-performing individuals and non-governmental organizations in the field of environmental education, expand their influences, and inspire citizens to jointly create a sustainable future for all. In addition, an exhibition displaying nominees' accomplishments was held to continue their social impacts, with winners rated "Excellent" invited to share their experiences to enhance overall capacity of all environmental educators. The EPA also expects to further integrate local environmental education resources to encourage public learning so that people from all walks of life can cultivate environmental knowledge and attitudes.

Meritorious Water Patrols Honored for Maintaining Water Environments

The Awards ceremony for Water Patrols of 2016 was also held on 5 June. Minister Lee honored 12 water patrol squads and thanked them for their hard work.

In 2017, 383 patrol squads with 10,046 volunteers have been established to assist in protecting and keeping watch of water environments to make public participation part of the water environment inspection efforts. The EPA commended their contributions to protecting water environments and in 2016 chose a total of 12 top-performing patrols for further acknowledgement after a series of evaluation processes. Among the 12 squads, two are rated as “Excellent,” three as “Good,” four as ones with “Special Contributions” and three as “Having Potential.”

The 12 meritorious patrols of 2016 all displayed excellent management skills and operation experiences, as well as fruitful outcomes. Besides regular inspections, patrol squads also take up the task of maintaining their local ecological environment.

Beishi Community Patrol Squad in Kanding, Pingtung, received the Excellence Award for collaborating with the government to jointly report livestock enterprises that violate regulations and building up the local

community’s environmental awareness. Another recipient, Jinhsing Neighborhood Patrol Squad in Taoyuan took up the maintenance of the constructed wetland greening zone of the Nankan River, as well as planning and providing low-carbon micro-tours of the historical and cultural sites along the Nankan River.

Patrol squads rated as “Outstanding” included Chungkuang Community College Water Environment Patrol Squad in Xindian, New Taipei City, which takes junior high school students on its regular patrols; Maliao Water Environment Patrol Squad in Taibao, Chiayi County, which transformed wasteland into Maliao Water Environmental Park; and Chimuo Water Environment Patrol Squad in Yuli, Hualien County proactively maintains the constructed wetlands along irrigation ditches.

In addition, four patrol squads were awarded for their special contribution to the water environment protection. The fishermen of the Tungyuan Fishermen’s Association in Miaoli County safeguard the oceanic ecosystem by recovering garbage found in the sea and the harbor during daily outing as well as removing the fishing nets that covered the ocean bottom to protect the marine environment. Chingshui River Ecological Conservation Association



▶ Award Ceremony for the 5th National Environmental Education Awards and Water Patrols of 2016

in Chushang, Nantou County, and Neigo River Patrol Squad in Taipei City, traverse the mountains and teach visitors about both rivers.

The Shinfu Patrol Squad in Guanshan, Taitung County consists of pig farmers and follows the government's policy of utilizing the fermentation liquid and sediments of livestock waste as natural fertilizers.

Lastly, those rated as "Having Potential" include Erren Riverbank Development Association in Tainan City which leads the public to participate in classes in planning the management of Erren River; Red Dragonfly Patrol Squad in Jinchu, Hsinchu City, which provides regular wetland tours; and Dawn River Patrol

Squad in Taichung City, which is known for its efforts in frequent patrols and ecological restoration.

The patrol squads not just conduct regular patrols but also keep the environment clean. Thanks to their devotion, the environmental violations are deterred and a good quality of living environment can be maintained. Minister Lee expressed his gratitude to the more than 10,000 members of water patrols for putting their love and care for the environment into practice. The EPA will keep working with local communities to encourage more residents to join water patrols and protect their homesteads as well as further pass on patrol experiences and knowledge of ecological conservation.

Toxic Substance

Premier Lin Visits Toxic and Chemical Substances Bureau

On 2 June 2017, Premier Lin Chuan inspected the Toxic and Chemical Substances Bureau of the Environmental Protection Administration, Executive Yuan, which was established as an implementation of the first ring of President Tsai Ing-Wen's Five-Defense Food Safety Promotion Policy to draw up a mechanism and focus on at-source control of toxic chemical substances. Through the inspection, the government showed its determination to control all toxic chemical substances from their sources and to build a sustainable environment with safe chemical substances by tracking the source and taking immediate action to protect food safety.

Food safety has become a major issue due to the multiple incidents that happened in recent years. In response, the government came up with a resolution, Five-Defense Food Safety Promotion Policy, and listed food safety as a priority for policy making in every government agency. Not only is the establishment of the Toxic and Chemical Substances Bureau a key implementation of the relative policies, the inspection by Premier Lin on 2 June also shows the importance the government places on food safety.

Premier Lin mentioned during the inspection that his goal is to achieve sustainable and green chemistry and to provide a safe and non-toxic environment for the citizens. Hence, he expects the Toxic and Chemical Substances Bureau to: properly manage



▲ Premier Lin Chuan (front row, center), EPA minister Ying-yuan Lee (front row, fourth from the left) and personnel of the Toxic and Chemical Substances Bureau

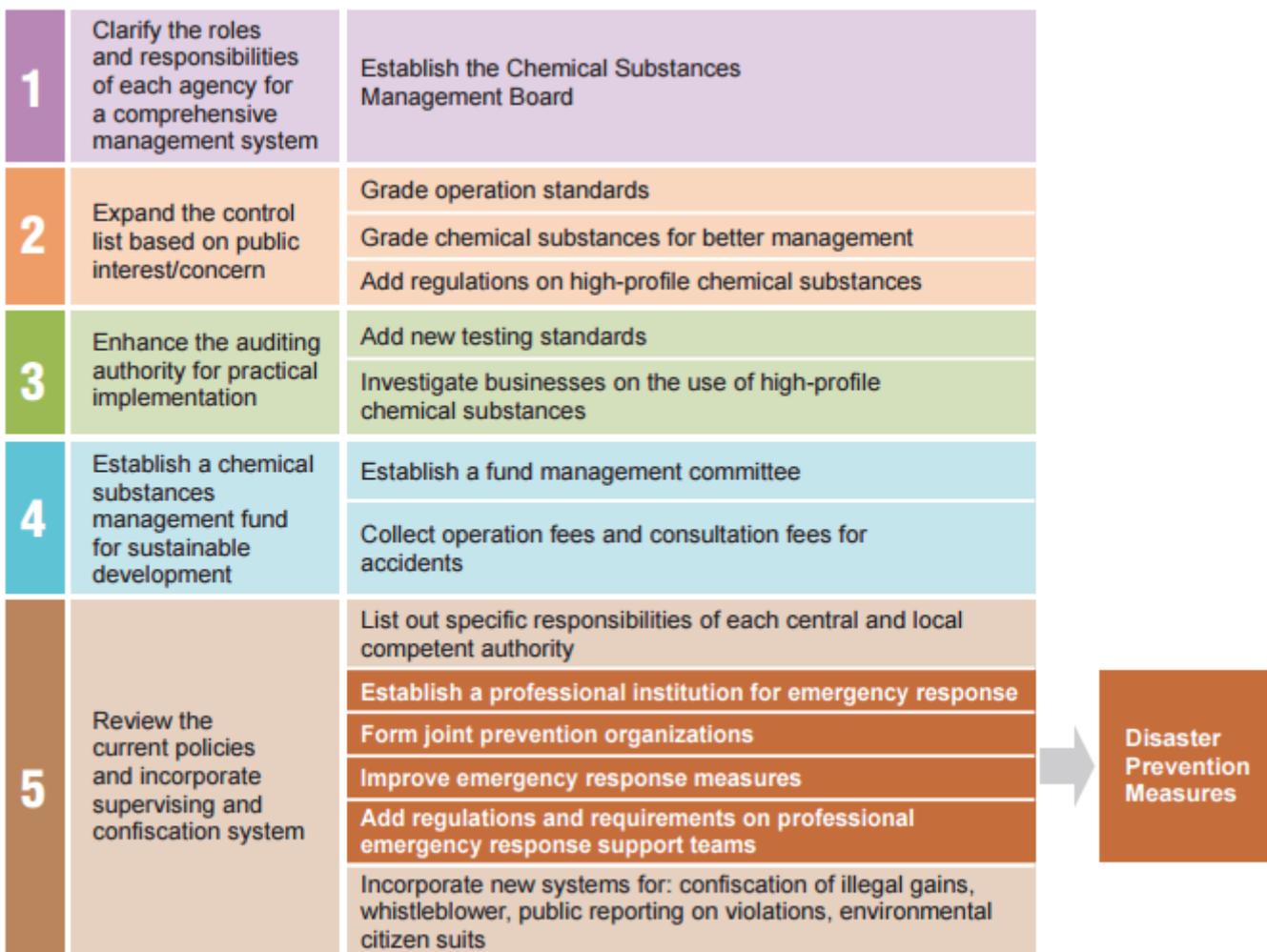
the sources of chemical substances by cooperating with different ministries; prevent illegal practice by conducting professional and strict inspection; develop a risk assessment and communication mechanism; and keep up with international management trends. Premier Lin also expressed his appreciation to the personnel on the toxic disaster response team for taking the risks to stand on the frontline and protect the health and happiness of our citizens. Moreover, he specifically requested that the EPA minister give priority to supporting the personnel on the response team and ensuring their safety while carrying out their missions.

Chemical substances are widely used for convenience in daily life. However, chemical substances can cause serious harm to the environment and human health if they are misused or abused. The EPA established the Toxic and Chemical Substances Bureau for the goal of building a safe and sustainable chemical environment. To achieve that goal, the first step in the Toxic and Chemical Substances Bureau's plan is to develop a management strategy for chemical

substances according to the UN's Strategic Approach to International Chemicals Management.

Chemical substances for general use had been under separate management by different ministries, so all the relative information was in strong need of integration. Since source management is one of the Toxic and Chemical Substances Bureau's jobs, the Chemicals Cloud was established to integrate data of chemical substances and to strengthen the cross-ministerial management. The Chemicals Cloud is not only beneficial when competent authorities are conducting inspections and comparisons, but it also provides warning service to prevent illegal use of chemical substances.

To ensure food safety and the safe use of chemical substances, the Toxic and Chemical Substances Bureau has already started revising the *Toxic Chemical Substances Control Act*. The revision will expand the control list of chemical substances by examining the chemical substances that are for general use or are highly discussed internationally



▲ Figure: Five main points of the amendments to the Toxic Chemical Substances Control Act

and then gradually adding the substances with potential harmful effects onto the control list. The first step is to strengthen the management of the chemical substances that are used illegally in food by making an announcement about regulating the chemical substances that have caused domestic or international food safety problems in the past 13 years. The announcement will be able to restrict businesses from the import, manufacture, sale, or use of those chemical substances and hence reduce the risk of illegal chemical substances in food.

To show its determination to control chemical substances at the source, the Toxic and Chemical Substances Bureau started promoting the Investigation and Guidance Plan for the Chemical Raw Material Industry from February 2017 and started the implementation on more than 2,000 businesses

in May. The Toxic and Chemical Substances Bureau began the plan from establishing a basic database for toxic chemical substances, and accompanied it with four supporting guidance strategies including: investigating the flow of chemical substances, asking the buyers' usage of the chemicals, storing chemical substances separately according to their toxic characteristics, and immediately reporting any violation. Furthermore, the Toxic and Chemical Substances Bureau partnered with local governments and chemical raw material business associations to conduct priority inspections on the 57 chemical substances that contain food safety risks. By providing on-site investigation and guidance, businesses could acquire the basic knowledge of chemical substances. Also, the EPA can better control the flow of chemical raw materials to avoid them being used illegally in food and harm public health.

Environmental Monitoring

EPA Provides Mercury Monitoring Instruments to Vietnam and Philippines

In an attempt to deepen regional cooperation in atmospheric mercury monitoring, Taiwan provided wet deposition samplers for mercury to Vietnam and the Philippines to improve the effects of atmospheric mercury monitoring in East Asia. It was brought about from the agreement made during the 6th Annual Asia Pacific Mercury Monitoring Network Partners Meeting and the 2017 Atmospheric Mercury Monitoring Training Workshop, both were jointly held by the EPA and USEPA on 15 - 19 June, 2017. Attendees from environmental agencies, academia, and research circles in a total of 10 countries took part in both events, with Minister Ying-Yuan Lee of the EPA and Chief of Staff Martin Dieu of the USEPA co-presiding the opening ceremony.

The EPA said that Taiwan has accumulated over a decade of atmospheric mercury monitoring data since the establishment of Lulin Atmospheric Background Station in 2006. In 2012, Taiwan also signed the cooperation agreement with the US and joined Atmospheric Mercury Network (AMNet), the first nation in Asia to become a member. With the same monitoring technology as that in advanced countries, Taiwan has begun further sharing it since 2014 by initiating pilot studies with Vietnam, Thailand, and Indonesia, as well as providing a wet deposition sampler for mercury. So far a total of 113 samples taken in Thailand have been delivered to Taiwan and will greatly benefit the establishment of regional mercury monitoring network in East Asia.

To strengthen the atmospheric mercury monitoring cooperation in the Asia Pacific region as well as monitoring capacity, the EPA and the USEPA jointly

held the 6th Annual Asia Pacific Mercury Monitoring Network Partners Meeting and the 2017 Atmospheric Mercury Monitoring Training Workshop on 15 - 19 May, 2017. Representatives from environmental agencies and academic researchers from a total of 10 countries, including the US, Canada, Korea, Vietnam, Thailand, Indonesia, Mongolia, the Philippines, and Bangladesh, attended the event and discussed various monitoring issues. The opening ceremony was presided by Minister Ying-Yuan Lee and Chief of Staff, Martin Dieu, of the USEPA. It was agreed that Taiwan would provide Vietnam and the Philippines each with a wet deposition sampler for mercury to further Taiwan's mercury monitoring cooperation with Southeast Asian countries.

The meeting and the workshop both centered around the technical training of wet deposition sampling and analysis of mercury. In addition to visiting the Center

for Environmental Monitoring and Technology and a mercury analysis laboratory, attendees also had hands-on practice and training on trace mercury

analysis to improve the partnering countries' quality assurance/quality control (QA/QC) of mercury monitoring data.



▲ Minister Ying-Yuan Lee of the EPA (left) and Chief of Staff Martin Dieu of the USEPA co-preside the opening ceremony of 6th Annual Asia Pacific Mercury Monitoring Network Partners Meeting and the 2017 Atmospheric Mercury Monitoring Training Workshop.

The EPA pointed out that the Taiwan-established Center for Environmental Monitoring and Technology can continue assisting other partnering countries in the Asia Pacific region in building mercury monitoring, sampling, and analyzing technology, personnel training, as well as regional information exchange and cooperation. In the meantime, mercury monitoring data and information of East Asian countries can also be shared, which will help expand the environmental monitoring and testing industry in Taiwan.

Air

Amendments to Regulations Governing Emergency Measures to Prevent Severely Deteriorated Air Quality Announced

In response to the air quality index (AQI) in central and southern Taiwan exceeding the standard during fall and winter, the EPA announced with the Ministry of the Interior (MOI), Ministry of Economic Affairs (MOEA), Ministry of Transportation and Communications (MOTC), Ministry of Health and Welfare (MOHW), and Ministry of Education (MOE) amendments to the *Regulations Governing Emergency Measures to Prevent Severely Deteriorated Air Quality* (空氣品質嚴重惡化緊急防治辦法) on 9 June, 2017 to hasten the improvement of air quality.

Data of manual sampling and monitoring of particulate matter (PM_{2.5}) shows that the average PM_{2.5} concentrations from 2013 to 2016 in Taiwan is 24, 23.5, 22 and 20 µg/ m³, respectively. The trend reflects a gradual decline of national PM_{2.5} concentrations and indicates effects of control measures. However, except for the three counties on the east coast, the average PM_{2.5} concentrations of other cities and counties are still higher than the standard of 15 µg/ m³. Moreover, air quality of PM_{2.5} in Taiwan fluctuates with location and time of year. Monitoring stations in central and southern Taiwan receive PM_{2.5} reading over the standard value of 35 µg/ m³ reached about 50% during fall and winter. Therefore, improving air quality in central and southern regions during fall and winter

is a top priority of air pollution control in Taiwan.

The EPA pointed out that the regulations are amended for government agencies, public and private venues, use of public transportation, and student events to take emergency measures when air quality is prone to deterioration due to weather changes or other factors. Different concentrations for severely deteriorated air quality and respective response measures are primarily based on the Air Pollution Emergency Contingency Actions of the US.

According to the regulations, alerts for severely deteriorated air quality are classified into two categories and five levels (two levels for alerts and three levels

for severe deteriorations). Before air quality reaches a severely deteriorated state, feasible and highly effective measures like cutting down manufacturing and voluntarily reducing load are taken to improve air quality in advance while still in the state of alert.

The EPA emphasized that all measures on pollution source control are to stop, delay, or cut down pollutant emissions, and they shall be conducted only when personnel and facility safety is ensured so that emissions of air pollutant are lowered during the manufacturing processes. Proper measures need to be determined based on the main pollutants at the time of alert announcements, but controls should also be considered for pollution sources of precursors for

(fine) particulate matter and ozone.

If unable to install air pollution control facilities or take relevant measures in accordance with the regulations, public or private venues must present an alternative emission-cutting proposal and carry it out after gaining approval from the competent authorities in the special municipal government, county, or city governments. After referencing from the control guidelines in alerted regions for different alert rates, these authorities will announce needed control measure, based on the local weather and characteristics of pollutant sources, and then include them in the overall air pollution control plans.

Table: List of air quality alerts and air pollutant levels that cause severely deteriorated air quality

Categories		Alert		Severely Deteriorated			Unit
		2 nd rate	1 st rate	3 rd rate	2 nd rate	1 st rate	
PM ₁₀ ≤ 10μm	Hourly average	-	-	-	1050 for 2 consecutive hours	1250 for 2 consecutive hours	μg/m ³
	24-hour average	126	255	355	425	505	
PM _{2.5} ≤ 2.5μm	24-hour average	35.5	54.5	150.5	250.5	350.5	Mg/m ³
SO ₂	Hourly average	76	186	-	-	-	ppb
	24-hour average	-	-	305	605	805	
NO ₂	Hourly average	101	361	650	1250	1650	ppb
CO	8-hour average	9.5	12.5	15.5	30.5	40.5	ppm
O ₃	Hourly average	0.125	0.165	0.205	0.405	0.505	ppm

Note: Index calculation for each rate of alerts and serious worsening

- 24-hour averages for PM₁₀, PM_{2.5}, and SO₂ are mobile averages.
- 8-hour average for CO is mobile average for 8 consecutive hours.
- Hourly averages for PM₁₀, O₃, NO₂, and SO₂ are real-time concentrations.

Toxic Substance

Amendments to Toxic Chemical Substances Control Act Preannounced

On 1 May, 2017, the EPA announced the new draft amendments to the *Toxic Chemical Substances Control Act* (毒性化學物質管理法). Other than focusing on chemical substances for food safety management and maintaining the current controls of toxic chemical substances in Categories 1 to 4, the new version also adds regulations specifically for concerned chemical substances.

To enhance controls on concerned chemical substances for food safety and promote at-source control of the Five-Defense Plan, the EPA has worked to revise the *Toxic Chemical Substances Control Act* to create a secure and sustainable chemical environment. Focuses of the draft revision include expanding controls on concerned chemical substances, strengthening competent authorities' inspecting powers, adding a cross-departmental coordination mechanism, and implement the polluter-pays principle.

Regulations concerning controls of the current chemical substances in Categories 1 to 4 will remain intact to maintain the public's understanding of said chemicals. On the other hand, a special chapter of regulations is added to expand listing of concerned chemical substances.

The EPA stated that the focuses of the revision are as follows:

1. "Concerned chemical substances" are added to increase the number of substances listed for control under categorized management in order to keep track of their movements. Meanwhile, the EPA also strengthens competent authorities' inspecting power.

2. Competent authorities will intensify operations on concerned chemical substances and those that should be registered other than toxic chemicals, and inspection authority will be clearly defined.

3. The National Chemical Substances Management Consultation Meeting is to be organized to coordinate the responsibilities and regulations for competent authorities of different industries, enhance the overall chemical substances controls in Taiwan, and reinforce inter-ministerial communication.

4. Based on the polluter-pays principle, details such as collection purposes, targets, and utilizations of the chemical substances fund are added to increase fund sources to expanding controls on chemical substances.

5. The emergency consulting system will be enhanced in response to environmental incidents, while current responsibilities of the central and regional competent authorities will be examined.

6. Other new additions include the whistleblower clause, witness protection, citizens' reports, public interest litigation, and recovery of illegal gains.

Waste

List of Products Made from Industrial Waste and Required for Flow Tracking Preannounced

The EPA preannounced the Products Made from Industrial Waste Required for Tracking on 31 May 2017. The regulations focus on reinforcing the tracking of industrial waste reuse to avoid damaging the environment from improper reuse of industrial waste. The announcement is expected to take effect in August 2018.

The EPA completed the revisions to the *Waste Disposal Act* on 18 January 2017. The amendments cover regulations concerning labeling for product reuse, common reuse purposes and waste flow tracking. Article 39-1 was also added to state that, for products announced by the EPA for reuse, the central industry competent authorities are responsible for tracking and management of product flow and for environmental monitoring.

With consideration to the purpose of the new policy and practical needs, the EPA is including industrial waste that can be reused for land reclamation and

land filling in the Reusable Products from Industrial Waste Required for Tracking. Moreover, seven types of industrial waste (eg: coal ash, electric arc furnace slag, mixed construction or building waste materials, etc.) that can be reused as land filling materials or bottom materials for concrete roads are also covered. In the future, all government agencies should follow the *Waste Disposal Act* to track the flow of industrial waste. If the reuse might cause environmental pollution, the reuse should be monitored. The regulations covered in the draft are estimated to take effect from August 2018.

Twenty-five Communities Awarded for Low-carbon Sustainability and Climate Change Achievements

On 12 May 2017 in Tainan City, EPA Chief Secretary Hui-Chiuan Hsiao awarded the outstanding communities that achieved energy saving, carbon reduction and sustainable development. The award ceremony was held in Jinhua Borough, a low-carbon community with silver class certification, and all participants of the ceremony took a tour in the community afterward. Chief Secretary Hsiao was very much impressed with the achievements of the awarded communities in carbon reduction and sustainable development. She encouraged all the participants to continue their hard work and assist other communities to build a low-carbon community.

The EPA points out that it takes everyone's participation to build a low-carbon sustainable homeland. Therefore, the EPA encourages all villages, townships, cities, and local governments to apply for the low-carbon sustainable homeland certification and suggests that they start taking action based on the six main flagship projects: ecosystem greenery, green energy and electricity saving, green transportation, low carbon building, and resource recycling.

After passing both written reviews and on-site inspections done by the review team, which is composed of experts and scholars, a total of 25 communities were certified as participants between April 2016 and 10 May 2017. Of those, 17 villages and boroughs received a silver class certification (including participants from Yilan County, Tainan City, Guantian, Liouying, Syuejia and Yujing District in Tainan City, Chientan Borough, etc.) and Kaohsiung City and Kinmen County were certified as bronze class.

Low-carbon communities are created in different ways based on environmental needs. Participants should build a low-carbon community that

highlights their environmental characteristics and make adjustments based on population and financial resources.

The ceremony also awarded 14 local environmental protection bureaus for their performance in climate change response: Taipei City, New Taipei City, Taoyuan City, Taichung City, Tainan City, Kaohsiung City, Hsinchu City, Hsinchu County, Changhua County, Pingtung County, Hualien County, Taitung County, Penghu County and Kinmen County. In addition to the cash reward, they also received recognition on their accomplishments in promoting greenhouse gas reduction and climate change adaptation, in auditing and recording greenhouse gas emissions, and in their performance in carbon neutrality.

The chief secretary mentioned in the ceremony that being certified as a silver class community is not the only reason why Tainan City's Jinhua Borough was chosen to be the ceremony venue; it also received the LivCom Award hosted by the United Nations Environment Programme in 2011. For those reasons, the community makes a good model and demonstration for other communities' reports.

Waste

Amendments to Regulations Governing General Wastes Recycling and Clearance Preannounced

Under the *Waste Disposal Act* (廢棄物清理法), wastes generated from the daily lives of enterprise staff are classified as general wastes. On 2 June, 2017, the EPA preannounced the draft amendments of the *Regulations Governing General Wastes Recycling and Clearance* (一般廢棄物回收清除處理辦法), which is to add relevant management regulations concerning disposal of wastes from the daily lives of enterprise staff.

The revised *Waste Disposal Act* took effect after the announcement on 18 Jan, 2017, placing wastes generated from the daily lives of enterprise staff under the category of general waste. Part of the draft amendments of the regulations preannounced by the EPA on 2 June 2017 add specifications for disposal of this type of waste.

Points in the draft amendments of the *Regulations Governing General Wastes Recycling and Clearance* are as follows:

1. Coordinating with the revisions of the *Waste Disposal Act*, definitions are added for wastes generated from the daily lives of enterprise staff and general waste discharge.

2. Additions include that other waste generators should authorize publicly operating waste clearance and disposal organizations, approved by competent authorities, to handle clearance and disposal of general wastes. In the newly added Announcement of *Enterprises With Industrial Waste Disposal Plans* (公告應檢具事業廢棄物清理計畫書之事業), it is required to specify wastes generated from the daily lives of

the staff in its waste disposal plan, and the hired general waste clearance and disposal organizations are mandated to report operating data regularly. Also, publicly operating organizations that have vehicles equipped with a tank, tank container, vessel tank, high-pressure vessel tank, and cargo tank should install a real-time tracking system.

3. Regulations are revised that households and other waste generators should sort wastes accordingly when hiring others for the disposal of general wastes.

4. Categories and management of general waste reuse are specified in the following table. Central competent authorities are to suspend the reuse stated in the table if it can potentially pollute the environment. Another new addition further states that, in the need of research and development for waste reutilization technology, an application must be submitted under the circumstance of a special project to the competent authorities in special municipal, county, or city governments for approval if general waste is to be used as sample with only a single batch for testing.

Reutilization Categories	Methods of Reutilization Management
No. 1 Food waste	<ol style="list-style-type: none"> Sources: Food wastes generated by households, and daily lives of staff of other non-industrial and industrial enterprises. Reutilizations: Organic fertilizers, potting soil, materials for soil improvement, animal feeds, and fuel materials or fuels for renewable bio-energy.
No. 2 Sewage	<ol style="list-style-type: none"> Sources: Sewage generated by households, and daily lives of staff of other non-industrial and industrial enterprises. Reutilizations: Ingredients of organic fertilizers, and fuel materials or fuels for renewable bio-energy.
No. 3 Lubricants	<ol style="list-style-type: none"> Sources: Lubricants with impurities like water less than 50% of content, which are expired or generated by households, and daily lives of staff of other non-industrial and industrial enterprises. Reutilizations: Base oil for lubricants, renewable oil products used as fuels, or other uses.
No. 4 Waste cooking oil	<ol style="list-style-type: none"> Sources: Waste cooking oil generated by households, and daily lives of staff of other non-industrial and industrial enterprises. Reutilizations: Ingredients for soaps, stearic acid, fatty acid methyl acid used as an additive in fuel oil, or bio-diesel; and fuel materials or fuels for other renewable bio-energy.

 Reutilization management for current general wastes, including food wastes, sewage, waste lubricants, and newly added waste cooking oil, are specified in the table above.

News Briefs

Regulations Governing Subsidies for Scrapping Large Old Diesel Vehicles Preannounced

The EPA preannounced the draft of the *Regulations Governing Subsidies for Scrapping Large Old Diesel Vehicles* (淘汰老舊大型柴油車補助辦法) on 2 June 2017. The draft focuses on providing subsidies to phase out large diesel cars that meet the phase 1 and phase 2 vehicular emission standards and on improving fine particulate matter (PM_{2.5}) pollution.

According to EPA's analysis on different pollution sources' contribution to the concentration of PM_{2.5}, up to 37% of PM_{2.5} emissions in Taiwan came from mobile sources, among which diesel trucks have the highest contribution at 16.8%. Most vehicles in Taiwan tend to be pretty old. In fact, with the exception of diesel trucks, more than 50 percent of vehicles are over 10 years old. Older cars have a higher emission of air pollutants and can worsen the air quality. Therefore, to protect the air quality, it is necessary to accelerate the process of phasing out old vehicles and strengthen the control on air pollutant emissions. To encourage car owners to get rid of their old cars, the EPA is providing an average subsidy of NT\$200,000 for scrapping large diesel vehicles that are older than 18 years old.

Amendments to Mobile Source Air pollution Control Fee Rates Preannounced

To reduce the PM_{2.5} emissions from gasoline and diesel vehicles, the EPA adjusted the air pollution control fee rates for mobile sources to NT\$0.3 per liter for gasoline and NT\$0.4 per liter for diesel to put the polluter-pays principle into practice. The fee collected will be used to reduce pollutants from gasoline vehicles and diesel vehicles to improve the air quality.

According to the EPA's analysis of the contribution of different pollution sources to the concentration of PM_{2.5}, around 30-37% of the total PM_{2.5} emission in Taiwan comes from mobile sources. The exhaust is mainly composed of primary PM_{2.5} and its precursors such as

volatile organic chemicals (VOCs) and NOx. However, the existing air pollution control fees for mobile sources do not include the PM_{2.5} emissions from mobile sources. If taking into consideration of internalizing the external environmental costs, economic incentives and the pollution control needs, the air pollution control fee rates for mobile sources need to be raised. Therefore, the increase of the pollution control fee rates is preannounced after analyzing the vehicular consumption of gasoline and diesel and the emission of PM_{2.5}.

Regulations Governing the Review of Industrial Waste Clearance and Disposal Plans Preannounced

In response to the *Waste Disposal Act* (廢棄物清理法) amended in January 2017, the EPA preannounced the draft of the *Regulations Governing the Review of Industrial Waste Clearance and Disposal Plans* (事業廢棄物清理計畫書審查管理辦法) on 24 May 2017.

The draft is to increase business's responsibility and to reinforce the waste management system by setting clear regulations. After the *Waste Disposal Act* was amended, the business's responsibility for waste management has increased significantly. Among the enhanced responsibilities, the industrial waste clearance and disposal plan that included the detailed operation information and the amount of waste generated are particularly important. The draft enhanced the legal framework of the process, time and principles for reviewing the submitted plans to give the review a higher legal status. The draft also added the regulations of the expiration date, revocation and cancelation of the plan. In addition, if certain wastes are generated, the enterprises need to include a copy of the contract of the clearance and disposal of such wastes in the plan.

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