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Feature Article

Toxic and Chemical Substances Bureau Established

On 28 December 2016, the Toxic and Chemical Substances Bureau of the EPA was officially established as an agency dedicated to the source control, auditing, and inspection of toxic and chemical substances, thus protecting public health. In the inauguration ceremony for the bureau director, Yen-Ju Hsieh, EPA Minister Ying-Yuan Lee vowed to safeguard food safety through strengthening the auditing and registration systems for toxic and chemical substances.

On 28 December 2016, the Toxic and Chemical Substances Bureau (TCSB) of the EPA was officially established in order to better safeguard the public's health.

The Executive Yuan sees food safety as a major public health issue, having listed it as top priority and having drawn up a mechanism to carry out President Tsai Ing-Wen's Five-Defense Food Safety Promotion Policy. Based in part on policy that focuses on at-source control, the TCSB is a higher-level, integrated unit set up from within current government units. Specifically tasked with toxic substance control, it is responsible for preventing food related risks at their source by controlling and tracking hazardous

substances at-source as well as conducting audits and inspections related to toxic and chemical substances.

At the inauguration ceremony of TCSB director Yen-Ju Hsieh, Minister Ying-Yuan Lee pointed out how food safety affects all members of the public and how the EPA has taken responsibility for the management of chemical substances currently not under government control. However, because of manpower and resource limitations, interministerial coordination is needed to comprehensively implement food safety policy. The EPA outlined the challenges of integrating at-source management arising from having a total of 12 government authorities and 17 sets of regulations

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for chemical substances management, which leads to difficulties obtaining information on involved enterprises, the amounts of chemicals processed, and details on chemical flows through industrial chains.

Visions and Goals

1. Serving as the designated unit for at-source management of chemical substances

In recent years the public has been paying increasing attention to food safety, and considers prevention is better than fixing problems afterwards. Raising the level of managing authority, which the EPA has done by founding the TCSB as the designated competent authority, not only increases the quality and the scope of toxic and chemical substances control, but also helps reduce food-related risks.

2. Assisting related ministries to strengthen management of chemical substances

Currently, a total of 12 competent authorities are in charge of managing chemical substances, with 17 sets of regulations and 36 related management systems for more than 100,000 chemicals under control. One major challenge is to improve chemical substances information management, such as information on enterprises, amounts processed, and details on flows through industrial chains. Making a thorough inventory of existing management regulations and systems is another key challenge. The TCSB will help establish the Chemicals Cloud as a cross-ministerial chemical substance information service platform to provide relevant authorities with the current status of chemical substances management and to create references for future improvement.

3. Strengthening interministerial cooperation on audits and inspections

The TCSB will screen chemical substances that may enter food production streams. This will be followed by selecting enterprises that show high risk potential by using the Chemicals Cloud. Relevant ministries will then enhance inspections to prevent the use of such chemicals in food products. Also, a firewall against food-related risks has been established by building up audit and inspection capacities for chemical substances.

4. Staying aligned with international chemical substances control trends

To keep up with international standards, the TCSB will compile an inventory of existing chemical substance management regulations in accordance with the guidelines, Strategic Approach to International Chemicals Management (SAICM), as well as hold regular interministerial meetings to ensure that Taiwan's chemicals management is in line with international standards. The management of about 3,000 chemical substances is expected to be reinforced by 2020.

Major Policies

1. Use audits to keep listed chemical substances from entering food production
2. Completing the national chemical substance control system and keeping up with international management trends
3. Providing consumers food safety information by establishing a chemical substance knowledge map
4. Screening sources of chemical substances that have the potential to enter food production, and screening relevant enterprises in the upper and lower food manufacturing stream
5. Constructing a firewall against food-related risks by enhancing capacities for audits and inspections regarding chemical substances
6. Establishing technical teams to conduct onsite testing and inspections during toxic accidents to reduce harms and risks to the environment
7. Establishing an accident monitoring and consulting center to provide year-round real-time professional consulting services involving toxic and chemical substances
8. Sharing Taiwan's experiences on toxic and chemical accident response with other nations by establishing professional training venues and providing international training programs for Southeast Asia
9. Assisting 5,000 joint emergency response associations to integrate civic capacities for response

to toxic and chemical accidents and advance toward zero harm from accidents

Administrative Focuses

1. Set priority on the strengthening of management of chemical substances that have food-related risk potentials

To adhere to the international trends, the TCSB aims to reinforce management of toxic and chemical substances as well as risk prevention and control of specific chemicals, while working on preventing and lowering food-related risks by tracking hazardous substances. The TCSB will first pick out illegal food additives as the control priority, including 57 chemical substances, and focus on separating factory management of food-grade chemicals from that of industry-grade ones.

2. Gradually further reinforce management of high-profile chemical substances

Besides chemical substances with high food-related risk potentials, the TCSB will gradually intensify the controls on chemical substances that are of high international concern, recommended by government agencies for tighter controls, or are of high concern to the general public. Based on the existing database established according to the *Toxic and Chemical Substances Control Act* (毒性化學物質管理法) covering about 27,000 chemical substances, the TCSB will draw up a target list for tighter control. The list will include substances of high public concern, or those recommended by the 12 relevant ministries, based on 17 sets of toxic and chemical substance control regulations. Interministerial meetings will be held with invited experts to decide whether further risk assessment is needed. After the collection of related information and conducting risk assessments recommended at the expert meetings, the TCSB expects to add 500 more substances to the control list each year. Hence, five years from now, controlled chemical substances will be increased to 3,000 from the current 310. The control will be carried out under toxic chemical substances management, chemical substances registration management and the promotion of the safe use of chemical substances.

3. Continue construction of interministerial information service system on chemical substances control

As of the end of 2016, the Chemicals Cloud had undergone transferring of data from 36 information systems of 12 agencies. Data on 101,089 chemical substances was brought to one platform for system planning, research, and analysis and used to develop four new applications: basic information inquiry, multifaceted selection for questionable enterprises, cross-category data comparison, and a chemical substance knowledge map. Through information integration on the Chemicals Cloud, the TCSB will keep collecting chemical substance information and integrating management systems of all competent authorities, undertake effective audits and inspections with its limited manpower by narrowing down the scope of impact, and develop relevance analysis function modules based on individual agencies' needs so as to enhance management structure and control quantity.

4. Establishing an interministerial coordination mechanism

(1) Establishing an interministerial coordination mechanism

For routine administrative coordination and management of regular chemical substances, an interministerial coordinating unit will be established. It will check listed suspects on the Chemicals Cloud platform, including chemicals with potential to enter food production streams such as malachite green and magnesium carbonate, and provide feedback to relevant departments via an inter-ministerial coordination mechanism so as to enhance joint at-source management.

(2) Holding risk assessment panel meetings on chemical substances

For chemicals of high international concern, those recommended for tighter controls by government agencies, and those of high domestic public concern, interministerial panels will be organized with experts invited to analyze the harmful levels of listed substances and conduct risk level information and risk evaluations in order to implement controls under the three guidelines for toxic substances management,

chemical substance registration and control, and assistance and promotion of safe use.

(3) Establishing an expert evaluation panel for toxic and chemical substances control

Harmful levels and risk assessments will be undertaken according to the EPA's Toxic Chemical Substances Screening Principles for chemical substances after analysis at the interministerial expert meetings. Afterwards, meetings will bring together panels of experts on toxic chemical substances and relevant ministries to evaluate control options for the substances in question and to give advice on toxicity classification.

(4) Establishing a chemical substance emergency report mechanism

A. Modeling after the reporting mechanism of the Environmental Protection and Food Safety Coordination Board jointly operated by the EPA, Ministry of Health and Welfare (MOHW), Council of Agriculture (COA), and Consumer Protection Committee (CPC), to swiftly handle problems an integrated emergency contact and report mechanism will be established to deal with chemical substance-related matters and convene interministerial meetings when emergencies occur.

B. The TCSB will hold regular meetings twice a year. In addition, emergency coordinating meetings will be convened when needed.

General Policy

New Environmental Measures Take Effect on 1 January 2017

The EPA has announced a total of 12 major environmental policies and measures closely relevant to the general public that are to take effect on 1 January 2017. Those related to air quality, the top public concern, include: first adding fine particulate matters (PM_{2.5}) into the classification of air pollution control zones; implementation of the sixth stage of motorcycle emission standards with stricter inspections on control standards for new vehicle models, new vehicles, and vehicles in use; and, implementation of the sixth stage of motorcycle noise standards with tighter controls. For water quality, measures include automated monitoring and testing on water quality and quantity for enterprises with a daily effluent discharge of 5,000 cubic meters or more; collection of water pollution control fees for the livestock industry; and, online reporting of regular wastewater testing data as well as water pollution control plans and relevant documents. Also, the public is encouraged to use public transportation by collecting environmental reward points. As for recycling policies, subsidy fee rates for recycling dry cell batteries, lighting sources, and certain recyclables have been adjusted.

List of New Environmental Measures Effective on 1 January 2017

	Policies/Measures	Descriptions (including estimated benefits) of Measures Effective on 1 January 2017
1	Revision of the Classes of Air Pollution Control Zones for Special Municipalities, Counties, and Cities	The control zone of fine particulate matters (PM _{2.5}) is added as a new class. The air pollution control zones are divided into three classes in all special municipalities and counties (cities), except Taitung County, to strengthen the work on cutting down air pollution, improve air quality, and safeguarding public health.
2	Mandatory online submission of registration for the sale and the use of bituminous coal, petroleum coke, or other air pollution-causing materials	Those with permits for the sale and the use of bituminous coal, petroleum coke, or other air pollution-causing materials are to submit registrations via the internet.

	Policies/Measures	Descriptions (including estimated benefits) of Measures Effective on 1 January 2017
3	The sixth stage of <i>Motorcycle Emission Control Standards</i>	<ol style="list-style-type: none"> 1. Control standards for inspections for new vehicle models, new vehicles, and vehicles in use are tightened to improve air quality. 2. The warranty time limit and mileage are extended for emission control systems. 3. On-board diagnostic (OBD) becomes mandatory equipment to remind vehicle users to conduct check-ups and repairs when vehicular abnormalities occur. 4. Enterprises with annual sales of 10,000 motorcycles or more are required to manufacture or import a certain amount of green-energy vehicles, such as motorcycles equipped with idle-stops, hybrid electric motorcycles, or electric motorcycles.
4	The <i>Sixth Stage of Motorcycle Noise Control Standards</i>	<ol style="list-style-type: none"> 1. Adding constant speed noise, additional sound emission provisions (ASEP), and muffler endurance test 2. Tightening the noise control standards for new vehicle models and random onsite testing for new vehicles
5	Automated monitoring of water quality and quantity for enterprises with daily effluent discharge of 5,000 cubic meters or more	Enterprises with daily effluent discharge of 5,000 cubic meters or more are required to conduct automated monitoring and testing on wastewater quality and quantity as well as transmit data to local governments to better control the discharge of pollutants.
6	Collection of water pollution control fee for livestock industry	As polluters should pay for their offences, the collection of water pollution control fees for the livestock industry was launched on 1 January 2017. Enterprises will begin filing for fee declarations on 1 July 2017 and do so every 6 months, with a 30% discount of fees in 2017, 20% in 2018, and so on until the full amount of fees is to be collected in 2020. Funds collected are earmarked for water pollution control, and to improve the overall quality of water bodies and enterprises will be encouraged to cut down pollution emission through economic incentives.
7	Online reporting of regular wastewater testing data	<ol style="list-style-type: none"> 1. Enterprises and operators of sewage systems are required to report testing data online. Reporting via written documents is allowed only with permission from the local competent authorities. 2. Make it easier for enterprises and operators of sewage systems to report testing data online to minimize mistakes and improve public access to relevant information
8	Online submission of application, alteration, or extension of water pollution control plans or permit documents	<ol style="list-style-type: none"> 1. Enterprises and operators of sewage systems are required to apply for, alter, or extend water pollution plans or permit documents online. Reporting via written documents is allowed only with permission from the local competent authorities. 2. Make it easier for enterprises and operators of sewage systems to apply for, alter, or extend water pollution plans or permits documents online to minimize mistakes and further public access to relevant information
9	Expansion of the scope of the environmental reward points for public transportation	Besides subways, green points can also be collected via taking buses, coaches, and trains to encourage the use of public transportation, cut down the use of private vehicles and better encourage the public to reduce the emission of air pollutants.

	Policies/Measures	Descriptions (including estimated benefits) of Measures Effective on 1 January 2017
10	Restrictions on manufacturing, import and sale of dry cell batteries	<p>1. Heavy metal limits for three types of button batteries – alkaline manganese dioxide, mercury oxide, and silver oxide – are subject to control. Manufacturers and importers are required to apply for and obtain the mercury and cadmium content verification documents of designated batteries from the local competent authorities before manufacturing or importing. Also, the serial number on the verification documents is to be put in clear print on the packaging of the batteries and articles that use them.</p> <p>2. Retailers are forbidden to sell button batteries and articles using the batteries without verification documents or without clear labels on the packaging as required. Button batteries and articles using the batteries manufactured or imported before 1 January 2017 are not subject to the new regulations.</p> <p>3. Such measures are taken to prevent batteries containing a high level of heavy metals from entering and polluting the environment.</p>
11	Adding straight-tube, ring-tube, compact light bulbs, and ballasts with built-in light emitting diode (LED) lighting sources as recyclables	<p>1. Straight-tube, ring-tube, compact light bulbs, and ballasts with built-in LED lighting sources have been announced as recyclables.</p> <p>2. Manufacturing and importing enterprises are required to pay the recycling fees.</p>
12	Revision of the Recycling Subsidy Fee Rates	To better reflect the operating costs of recycling and to maintain the stable operation of the Resource Recycling Fund, the EPA has announced revisions to recycling fee rates. Rates for five items, such as waste computers and liquid-crystal display (LCD) screens, are lowered, and those for waste keyboards are raised. The changes took effect on 1 January 2017.

Climate Change

Efficiency Standards and Incentives Planned for Carbon Reduction

In accordance with Article 22 of the *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法), the EPA convened a public hearing on the draft of the *Regulations Governing Incentives for Greenhouse Emission Sources Compliant with Efficiency Standards* (溫室氣體排放源符合效能標準獎勵辦法). The draft aims to encourage emission sources to take voluntary early reduction actions. A total of 47 industrial organizations and government agencies attended the hearing. Through the regulations, the EPA hopes to provide incentives for the emission sources to get an early start on carbon reduction as well as to prepare for a future cap-and-trade system under the *Greenhouse Gas Reduction and Management Act*.

The EPA pointed out that Articles 22 and 27 pertain to incentive mechanisms of the overall structure of the *Greenhouse Gas Reduction and Management Act*. The *Regulations Governing Incentives for Greenhouse Emission Sources Compliant with Efficiency Standards* were drafted under the authorization of Article 22 to

establish an incentive mechanism through issuing reduction quotas. Different from other incentives in the forms of subsidies or tax cuts, the regulations aim to encourage enterprises to start implementing carbon reduction measures before the implementation of a cap-and-trade system. When the reduction of

greenhouse gas emissions from equipment and product manufacturing meets efficiency standards, reduction quotas will be issued to an enterprise which can be used to offset its emissions once the cap system is launched. These incentives offer enterprises a new way to reduce carbon emissions and to get an early start, which would help slow down the growth of domestic carbon emissions.

Since the reward scheme in the drafted regulations is involved with how a future cap system will operate, careful planning and consideration of consistency with current reduction schemes are needed. Taking references from relevant reward regulations, the draft

states that the implementation of carbon reduction measures shall not violate any environmental laws and regulations or cause any major public nuisances and disputes. The draft also requires enterprises to improve in areas such as energy efficiency and manufacturing technology.

The hearing participants included representatives from 47 organizations and governmental agencies, such as the National Federation of Industries, relevant industrial associations, central government agencies like the Ministry of Economic Affairs (MOEA), and local environmental bureaus. All participant comments were collected and are being reviewed by the EPA.

Climate Change

Representatives of Asian Countries Meet in Taiwan to Discuss Carbon Market Schemes

The 22nd Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP22) held in Marrakesh, Morocco, passed the Marrakesh Action Proclamation on climate and sustainable development. The proclamation reaffirmed the importance of the market incentive mechanism to achieve environmental protection goals as well as lower carbon reduction costs. To extend experience exchanges on utilizing such mechanisms with neighboring Asian countries, the EPA held the 2016 Asia Dialogue on Carbon Trading and Measures for Carbon Emission Reduction on 13 December 2016. The dialogue invited experts from five countries – Japan, Korea, the Philippines, Thailand and Vietnam – to discuss and exchange experiences on the designs and practical applications of carbon trading mechanisms and reduction measures.

The EPA held the 2016 Asia Dialogue on Carbon Trading and Measures for Carbon Emission Reduction on 13 December 2016. In his opening remarks, Minister Ying-Yuan Lee mentioned that Taiwan had passed the *Greenhouse Gas Reduction and Management Act* in 2015 under growing global concern with climate issues, and in November 2016 it further drafted the *National Climate Change Action Guidelines* as the general guidelines for tasks and policies regarding greenhouse gas reduction. Among over 200 action plans designed to achieve carbon reduction in Taiwan so far, the market incentive stands out as a significant focus for future promotion that will be used to reach environmental protection goals, while lowering costs for the regulated parties.

The dialogue centered on two topics: the current status of carbon markets; and, exchange on the practical use of carbon reduction tools, to discuss designs and applications of emission trading and

carbon reduction tools. Representatives from Japan, Korea, the Philippines, Thailand and Vietnam were invited to exchange insights with local experts and academics who have long been involved in these issues. Experts from Japan and Korea, both of which had implemented carbon markets for several years, pointed out that a trading mechanism is able to lower regulated enterprises' costs of carbon reduction. However, they also mentioned that the scope of regulated emission sources needs to be sufficiently wide, and importantly, a comprehensive, well-designed system of measurement, reporting and verification (MRV) that complies with international specifications is needed as a foundation to ensure good operations of such mechanisms.

Besides the emission trading scheme, attending representatives also shared experiences on various other reduction tools, including projects executed domestically or with other countries. It was concluded that cross-national and cross-regional cooperation

is a significant supporting factor to increase the effectiveness of the reduction tools. Based on the legal framework of the *Greenhouse Gas Reduction and Management Act*, the EPA stated that, in order to establish the policy tools able to effectively lower impacts for and costs of the regulated enterprises, it is necessary to establish an exchange mechanism on

regional reduction tools and strengthen partnerships to share practical experiences. In this light, the EPA will continue its cooperation with neighboring countries to complete the development of a legal infrastructure for a cap-and-trade system, as well as closely follow international trends and collaboration opportunities in the carbon market.



▶ EPA Minister Ying-Yuan Lee (fourth from left, front row) with the invited experts of the 2016 Asia Dialogue on Carbon Trading and Measures for Carbon Emission Reduction

Air

Second Batch of Premises Subject to Indoor Air Quality Act Announced

To improve indoor air quality and protect public health, on 11 January 2017 the EPA announced the second batch of premises that are to comply with the *Indoor Air Quality Act* (室內空氣品質管理法), in accordance with Article 6 of the Act. After thorough consideration of the capacity, flows of people, risks caused by indoor air pollutants, and particular needs of public and private premises, the EPA is announcing the premises that should comply with the *Indoor Air Quality Act* batch by batch. The latest announcement adds about 900 premises to the control lists.

The first batch of premises that should comply with the *Indoor Air Quality Act* was announced on 23 January 2014 and entered effect on 1 July 2014. To better control and improve indoor air quality and safeguard public health, the EPA has expanded the scope of premises subject to the Act and thus made this announcement on the second batch of premises that should comply with the *Indoor Air Quality Act*.

The EPA states that this announcement not only includes the expansion of the controlled facilities of the premises announced in the first batch, but also the expansion to six other types of premises: museums, business operation sites of financial institutions, performance halls, cinemas, KTV/MTV premises and gymnasiums. In total, about 900 premises and facilities are listed in the second batch.

The EPA is giving a grace period to reduce the impact on affected premises. Premises established before and within a year of the effective date of the announcement are required to formulate an indoor air quality maintenance and management plan. Also, the first regular indoor air quality test is to be conducted within a year of the effective date.

As for the premises established after the effective date of the announcement, an indoor air quality maintenance and management plan has to be made

as of the establishment of premises, and the first regular indoor air quality test must be conducted within a year of the establishment date of the premises.

The EPA stated that this announcement has officially become effective. Therefore, owners, managers or users of premises listed in the second batch should start carrying out indoor air quality management measures in compliance with the *Indoor Air Quality Act*, and thus avoid penalty or punishment.

Environmental Monitoring

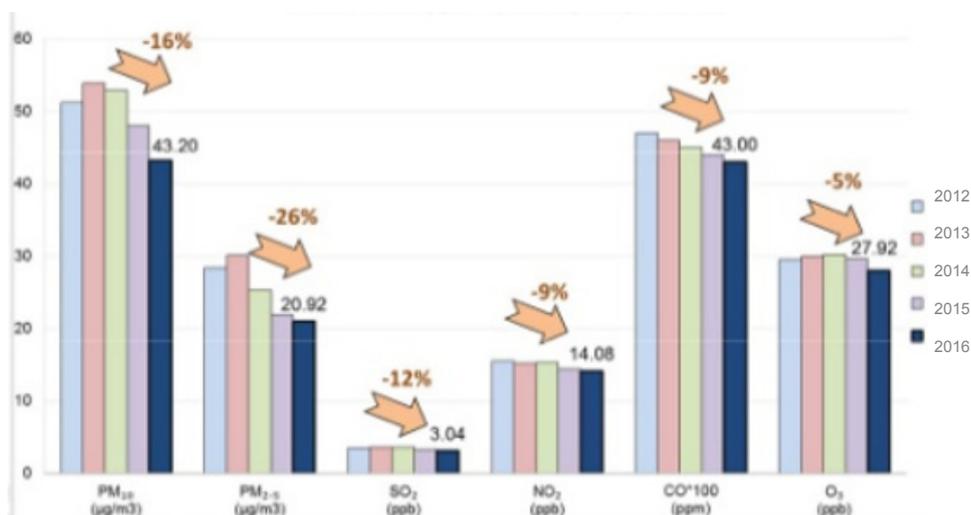
Air Quality Improved in 2016

According to air quality monitoring results from 1 January to 25 December 2016, the concentrations of most major air pollutants has fallen compared to the previous year. For example, there were decreases in the number of days with particular matters (PM₁₀) levels exceeding standards, as well as a lower frequency of fine particular matters (PM_{2.5}) readings higher than 150 according to the air quality index (AQI). There were also fewer days experiencing a maximum daily eight-hour average that exceeded limits. The only exception is that the number of days on which hourly O₃ levels exceeded the limit has increased. The EPA points out that air quality in 2016 improved in large part due to improvements in both local and transboundary pollution, and a larger number of rainy days.

From 2015 to 2016, the percentage of days on which PSI values exceeded a threshold of 100 had increased from 0.55% to 0.64% mainly because of the growth in high ozone (O₃) days. On the other hand, days with PM₁₀ value readings beyond the standard had reduced significantly. Air quality red alert days across the whole nation had fallen by 13.5%, from 997 days in 2015 to 862 days in 2016.

Monitoring statistics show that the concentrations of most major air pollutants declined every year,

indicating that pollution control measures are gradually having an effect. The EPA also points out that weather conditions have a great influence on air quality. For example, the heavy rain in southern Taiwan around January and February 2016 considerably reduced the concentration of particulate matters. On the other hand, the frequent occurrence of typhoons in autumn was favorable to the growth of ozone, which was reflected in the greater number of days with high ozone levels.



▶ Concentrations of major air pollutants have declined in recent years.

Water

Collection of Livestock Industry Water Pollution Control Fees Starts

Livestock industry operators will be required to pay water pollution control fees starting from 1 January 2017, and the EPA will begin collection of these fees on 1 July 2017. Entities subject to the livestock industry water pollution control fees are those that discharge wastewater into surface water bodies, further defined by criteria stated in the enterprise classification and definitions of the *Water Pollution Control Act*. To ease the impact on industry, the fees will be collected incrementally over years with discounts. The EPA is offering a 30 percent discount rate off the calculated sum for the first year, and the fees collected the following year will be 20 percent off, and so on. The EPA is planning to resume the original rate as of 2020.

Livestock industry water pollution control fees will be calculated based on the water quality and quantity of the wastewater discharged into surface water bodies. Effluent will be tested for pollutant concentrations as well as chemical oxygen demand (COD) and suspended solids (SS), and then compared to the effluent standards to decide the discount rate. Therefore, the less pollutants discharged, the higher the discount that will be given to farm operators.

For example, for smaller pig farms that have fewer than 200 pigs, the EPA has designed a simpler calculation formula in which fees will be computed based on the number of pigs, and the discount rates will be slated for the next three years. For year

2017, the farm operators have only to pay NT\$17.2 for each pig and the fee will be increased yearly to NT\$24.6 for year 2020. Statistics show that among the 7,800 farm operators who need to pay for livestock water pollution control fees, 90% of them are pig farms.

The EPA estimates it will collect NT\$30 to 50 million in water pollution control fees in 2017 from the livestock industry. To improve the current pollution situation caused by livestock wastewater discharge, the EPA is strengthening effluent control and inspection, imposing livestock water pollution control fees, and promoting the use of pig waste fermentation liquid and sediment as fertilizers.

Soil & Groundwater

Amendments to Remediation Fees Collection Regulations Announced

To improve soil and groundwater pollution management, the EPA has amended the *Regulations Governing Collection of Soil and Groundwater Pollution Remediation Fees* (土壤及地下水污染整治費收費辦法). The amendments adjusted the categories of substances subject to remediation fee collection and fee rates. Moreover, the EPA amended the fee collection method and will start collecting remediation fees based on industrial waste codes instead of industry categories. The EPA also abolished the requirement that the remediation fees collection system should be reviewed and adjusted every four years. The amended regulations will take effect on 1 July 2017.

After reviewing the current status of soil and groundwater pollution management and the relationship between items listed for the collection of remediation fees and their pollution potentials, the EPA decided that pollution sources and remediation costs should be better reflected in remediation fees. In accordance with Article 28 Paragraph 2 of

the *Soil and Groundwater Pollution Remediation Act*, substances subject to remediation fees are determined based on the following three factors: the pollutants discovered at contaminated sites; current substances being controlled or monitored for soil and groundwater pollution; and, chemicals with pollution potentials. The amendments

include adding 22 new items into Table 1 of Types of Substances Subject to Soil and Groundwater Pollution Remediation Fees and Respective Fee Rates for a total of 151 items. Also, to maintain fairness of the system, the industry types formerly used to determine waste fee rates will be replaced by the new waste codes listed in Table 2.

The EPA points out that the fee rates have been adjusted to correspond to the changes in industry

categories, collection ratios, and total amount of fees collected. The requirement that the remediation fees collection system should be reviewed and adjusted every four years is replaced by rolling reviews of fee rates and of items subject to fees.

To help enterprises understand the new regulations, the EPA will hold several explanatory workshops. Additionally, a toll free number is now available to provide assistance regarding the amendments.

▶ Category and numbers of substances subject to the soil and groundwater remediation fees before and after the amendments

Category	Current Number of Substances		Amended Number of Substances	
Substances Announced for Fee Collection	1. Petroleum-based organic compounds	51	51	
	2. Chlorinated hydrocarbons	33	34 (+1)	
	3. Non-petroleum-based organic compounds	17	17	
	4. Pesticides	2	15 (+13)	
	5. Heavy metals and their compounds	23	31 (+8)	
	6. Others	3	3	
	Subtotal	129	151 (+22)	
Industrial Wastes	1. For 12 specified industries (1) Renewable resources (2) Harmful industrial wastes (Mid- and end treatment/reuse) (3) Regular industrial wastes (Mid- and end treatment/reuse)		1. Petroleum-based organic compounds	16
	2. For one specified industry: Solid chemical substances		2. Chlorinated hydrocarbons and other chemical substances	10
			3. Heavy metals and their compounds	40
	Subtotal	6 fee rates for 13 industries	Amended fee rates collected under specific codes for each waste	

Environmental Sanitation

Management Regulations for Pest Control Operators Amended

With a view toward enhancing the professional services provided by pest control operators and personnel who apply environmental agents, the EPA amended the *Pest Control Operators Management Regulations* (病媒防治業管理辦法) to strengthen the management of the use of environmental agents and to bolster the public's awareness of the importance of safety in using environmental agents.

In addition to requesting the full-time presence and supervision of pest control professional technical personnel during the application of environmental

agents, provisions were formulated to require technical personnel to wear identification badges during their operations so as to publicly display their

qualifications. Moreover, the application personnel are required to participate in related training and refresher training sessions. To allow members of the general public to fully understand the characteristic of legal environmental agents used by the pest control operators, the operators are required to submit an operating plan to their clients before any operation begins. Only after the appropriate client signs onto the operating plan can the application begin.

In accordance with the provisions of the *Environmental Agents Control Act* (環境用藥管理法), the EPA formulated and announced the *Pest Control Operators Management Regulations* (病媒防治業管理辦法). The management regulations had previously been amended several times. The main points of the latest amendments, made on 30 December 2016, are as follows:

1.The pest control professional technical personnel must be on site on a full-time basis to supervise

operations. The training and refresher training of pest control application personnel should be conducted by a governmental agency commissioned by the central competent authority.

2.The training record of the agent application personnel shall be sent online to the appropriate competent authorities for future reference.

3.The pest control operators shall not use expired agents for pest control.

4.The pest control operators shall submit an application plan to the competent authorities online before the application of environmental agents.

5.The application records shall be compiled and reported to the competent authority on a monthly basis rather than yearly.

News Brief

Autumn and Winter Air Quality Improved by Adopting AQI

The Air Quality Index (AQI) has been used by the EPA since 1 December 2016. The EPA initiates enhanced control measures whenever the index exceeds 100 (AQI>100). At present, the EPA is coordinating with industry to set times for annual maintenance or to reduce their operation capacity during periods prone to worse overall air quality. In addition, the EPA is requesting enterprises to enhance the efficiency of their pollution control equipment. To further prevent the deterioration of air quality, the EPA has also strengthened inspections of old, heavy duty diesel trucks. Since the adoption of the AQI, as of 18 December 2016, a total of 112 diesel trucks have been inspected in central and southern Taiwan on days with poor air quality. Of these trucks, two were found faulty. The violators have been reported and issued deadlines to make improvements. The EPA has also asked government-run enterprises to set an example by raising the operation efficiency of pollution control equipment, thereby reducing air pollutant emissions to improve air quality. In response to the recent days with poor air quality, the EPA has requested local environmental authorities to strengthen inspections and penalty issuance to pollution sources that violate regulations. The EPA also instructed local environmental bureaus to report inspection results in accordance with the *Poor Air Quality Notification Procedures* (空氣品質不良通報查處作業程序).

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