



Environmental Policy Quarterly

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Toxic Substance

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 for chemical substances management, which leads to difficulties obtaining information on involved

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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 the UN 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. Using 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.



↑ The guidelines aligning with the UN Strategic Approach to International Chemicals Management (SAICM)

Waste

Amendments to Waste Disposal Act Take Effect

The amendments to the *Waste Disposal Act* (廃棄物清浄法) were announced on 18 January 2017 and took effect on 20 January. They clarify the definitions of wastes and what constitutes wastes to enhance enterprises' related responsibilities for disposal and environmental improvement. The amendments also cover regulations concerning labeling for product reuse and waste flow tracking, with harsher penalties for violators.

The EPA stated that the latest amendments to the *Waste Disposal Act* have amended a total of 18 articles by adding three new ones and revising 15 others.

1. Article 2 added the definition of “waste” and revised the definitions of general and industrial wastes to make the waste produced in daily life by industry staff included as general waste. In addition, industrial waste is defined in Article 2-1.

2. An addition in Article 14 Paragraph 2 states that the central competent authorities are authorized to announce the ways of clearance and disposal of household waste.

3. An addition in Article 28 states that executing authorities can be commissioned for industrial waste treatment only when surplus capacity is available

after household waste is appropriately treated; a related provision is also added to authorize the central competent authorities to coordinate the use of existing waste treatment facilities when they are needed.

4. Amended Article 30 clearly states that enterprises bear the same responsibility as the organizations that are commissioned for waste disposal. If the commissioned organization does not handle waste properly while its commissioner fails in his/her supervising duty, both are liable for the clearing of the said waste as well as the improvement of the affected environment.

5. Added into Article 39 was a stipulation that, for industrial waste with common reuse purposes falling under two industry competent authorities, the central competent authorities

are to draft reuse management regulations if deemed necessary. Article 39-1 is also added to state that, for products announced by the central competent authorities for reuse, the central industry competent authorities are responsible for tracking and management of product flow and, when needed, conduct environmental monitoring.

6. Revisions were made to provisions on penalties, to raise maximum prison sentences and fines and impose harsher penalties based on each violation, instead of continuous penalizing on a daily basis.

7. Article 63-1 is added to authorize the central competent authorities to draft regulations concerning penalty standards and calculations of illegal gains.

Soil and 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) 2. For one specified industry: Solid chemical substances		1. Petroleum-based organic compounds	16
			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	66

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.

Water

Collection of Livestock Industry Water Pollution Control Fees Starts

Livestock industry operators are 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.

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.

Air

EPA and EPBs Co-announce 2017 Air Quality Improvement Targets

The EPA and local environmental protection bureaus (EPBs) held a press conference on 18 January 2017 to announce the air quality improvement targets for 2017. The main target is to reduce red alert days by 20% as compared to 2015. To achieve this goal, the EPA has set three targets: halving the quantity of two-stroke motorcycles to 500,000, eliminating 10,000 old diesel vehicles, and subsidizing 1,000 boilers to switch to burning natural gas instead of oil within two years.

EPA Minister Ying-Yuan Lee states that there is no shortcut to air pollution amelioration, and the key is to make sure control measures are properly and thoroughly executed. Although

facing uncertainties caused by weather conditions, the EPA is confident it can achieve its air quality improvement targets by working with local environmental protection bureaus to actively

promote related control measures.

To reduce pollution from sources such as factories, automobiles, open-air burning and fugitive dust, the EPA explains that it



↑ EPA Minister Ying-Yuan Lee (front, sixth from right) holds a press conference with the heads of Taiwan's EPBs to announce the air quality improvement targets for 2017.

will continue to tighten emission standards, strengthen inspections, and carry out existing control measures. Additionally, the EPA will also formulate specific and quantifiable improvement targets for small boilers, two-stroke motorcycles and old diesel vehicles that are high in quantity, low in pollution emission, and which have advanced pollution control technology available for them. The improvement targets include: providing subsidies of up to NT\$500,000 for each case,

to about 1,000 hotels, hospitals and schools with boilers that use heavy oil, so that they can install natural gas or electricity heating equipment within two years; phasing out 10,000 heavy duty diesel trucks that meet the phase 1 and phase 2 vehicular emission standards, along with 500,000 two-stroke motorcycles; installing soot filters on 1,000 diesel vehicles; and subsidize 500 enterprises to hire green trucks.

The EPA will work closely with

local environmental protection bureaus to promote a variety of air pollution control measures and allocate reduction tasks and responsibilities according to the types and quantity of pollution sources in each area. To accomplish the goal of reducing red alert days ($PM_{2.5} > 54 \mu g/m^3$) by 20 percent compared to 2015, the EPA also plans to provide control tools by formulating air pollution control regulations and increase the amount of subsidies to NT\$2 billion for 2017 and 2018 each.



↑ EPA Minister Ying-Yuan Lee (front, center) rides an electric scooter with the heads of local environmental protection bureaus.

In addition, local environmental protection bureaus have set their priorities: “Fresh Air, Livable City” for Taipei; “Gas Replaces Oil, Fresh Air for Taichung” for Taichung; and “Air Pollution Governance Demonstration from Siaogang” for Kaohsiung. In the future, the EPA will continue the cooperation with other ministries and local environmental protection bureaus. The EPA also urges the general public to work together on pollution control to improve air quality.

Environmental
Monitoring

English Version of Environmental Info Push App Available for Free Download

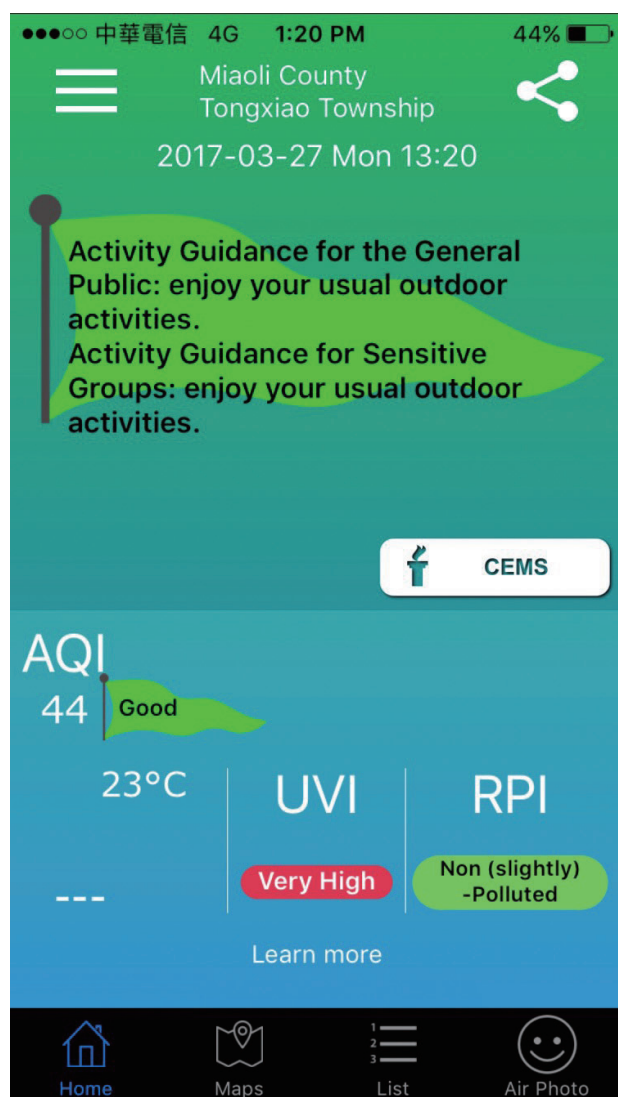
The EPA continues to provide the public with detailed information through real-time air quality information disclosure and warning forecasts. Awarded by the Geospatial Media and Communications Group with the Geospatial World Excellence Awards in 2016, the EPA's Environmental Info Push App has been downloaded more than 280,000 times, with daily peak usage reaching 20,000 devices and the monthly average number of clicks hitting a million. These statistics show that the app has become part of the populace's daily lives, with even more use during weekends.

According to the EPA's 2016 statistics, the users of the Environmental Info Push App are distributed widely around the world, including east Asia, southeast Asia, North America, western Europe, and Oceania.

Around 1.5% of the users used an English mobile OS. In detail, there were more than 3,000 English language users with over 170,000 sessions. This shows that environmental protection transcends national boundaries.

To enhance service quality and expand targets, the app is available in English for Android-enabled and iOS-enabled cellphones to provide environmental information service to English language users. Users can monitor the quality of the air in their surrounding area anytime via the Environmental Info Push App. With the air quality index shown in different colors, it is easy to learn about air quality statuses and follow suggestions in the app for corresponding actions and prevention measures.

The EPA has also noticed that the public's demand for environmental information has greatly increased, so the administration continuously works to improve environmental quality and develop more value-added applications. For the next step, not only will the EPA widely set up environmental sensors but will also include micro-level real-time air quality information from the private sector to let users know more details about their local environmental conditions. In the future, the EPA will continue to focus on the public's needs and offer richer environmental information to boost public participation and take care of our environment anytime and anywhere.



↑ Air quality monitoring information around Taiwan is provided by a free app.

Climate Change

EPA Holds Forum to Enhance International Participation to Deal with Climate Change

On 20 February 2017, the EPA held the Forum on Participation in International Environmental Conventions. Representatives from all sectors of Taiwan society who have long been concerned with the United Nations Framework Convention on Climate Change (UNFCCC) were invited in order to discuss ways in which non-governmental organizations (NGOs) can participate in UNFCCC activities. Also invited were representatives of various communities to discuss how they can deepen their participation in the issues. After a series of discussions, the forum arrived at a consensus on direction and a new outlook for future cooperation.

EPA Minister Ying-Yuan Lee opened the forum with a speech on Taiwan's current status in dealing with the UNFCCC. He pointed out that President Tsai Ing-wen had clearly indicated in her May 2016 inauguration speech that Taiwan would not be absent from dealing with issues of global warming and climate change. Yet, due to international political obstacles, Taiwan is not allowed to participate in UNFCCC activities, but must participate under the status of an NGO observer. For the time being, eight civic groups from Taiwan have successfully

applied to become UNFCCC observers and have actively participated in related activities. In this way, the strength of Taiwan's NGOs is fully demonstrated.

Two special themes were included in the forum. The first was the sharing of success stories and highlights of past participation in international conventions by civic groups. This was done to encourage more potential and interested civic groups to participate in activities related to international conventions in the future. The other theme was the

participation of local governments and the participation of women, youth, and indigenous people in international conventions. This shall prove to be a pluralistic method whereby the vitality of different communities as well as indigenous tribes can be included in international activities. All the delegates who attended the forum, including representatives from relevant ministries, local governments, civic groups, scholars and experts, industry, and so on, freely exchanged their views under the abovementioned consensus.

Water

2016 River Water Quality Best Since Monitoring Started

The EPA has announced the river water quality monitoring results for 2016. The proportion of severely-polluted river segments, considered an important indicator for river quality, was greatly reduced to 2.5% overall for 50 major rivers. Meanwhile, the proportion of severely-polluted segments in the 11 key rivers undergoing remediation decreased to 7.4%, compared to 13.2% in 2001. Results for both the 50 major rivers and the 11 key remediation rivers are the best results ever observed since river monitoring started in 2001. The EPA hopes that by encouraging reporting of violations, increased penalties, better total heavy metal discharge control, and livestock waste reutilization will help achieve the goal of getting all rivers off the severely-polluted list as soon as possible.

The EPA states that the three major river pollution sources in Taiwan are household, industrial and livestock wastewater. Rolling inspections and analysis on nationwide river water quality are conducted on a yearly basis.

Seriously polluted river segments are to be set as key monitoring station sites for water quality improvement, so as to accomplish the ultimate goal of lowering water pollution at all monitoring stations to the moderately polluted level or

less.

Regarding the three major river pollution sources, the EPA has been working on the implementation of various reduction strategies for severe

pollution and is continuously enhancing the plans. Not only was the *Water Pollution Control Act* (水污染防治法) amended on 4 February 2015 to raise the maximum fine imposed for violations to NT\$20 million, but illegal gains in the event of serious violations will also be confiscated. The amendments also encouraged the public to report violations. If the information regarding a violation is proven to be accurate, the informer will receive a monetary reward.

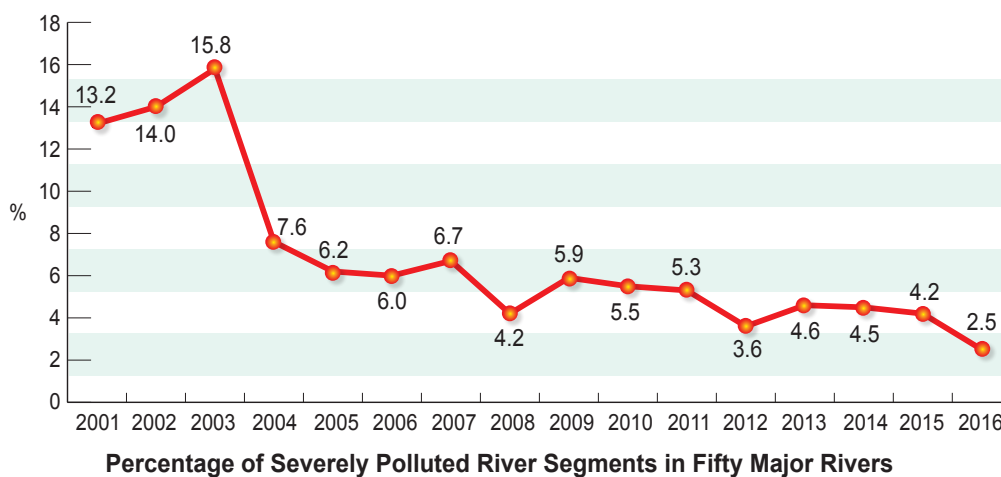
New provisions were also added to the *Water Pollution Control Act* which stipulate enterprises that discharge, store, or dilute wastewater without permits will not only be fined but also be ordered to suspend their operations or

business entirely. To carry out total quantity control of river pollution, the EPA selected three cities/counties (Taoyuan City, Taichung City, and Changhua County) with more serious farmland pollution in 2016 to promote the Total Heavy Metal Discharge Quantity Control Plan for Farmland Water Body Protection, and completed the delineation and announcement of total quantity control zones.

Moreover, the EPA assists local governments to conduct inspections and tighten the effluent standards of pollution sources located along the banks of some rivers. To expedite the pollution improvement process for rivers with serious pollution or high heavy metal values, the EPA will continue to supervise and assist

local governments to promote total quantity control of severely-polluted river segments and to tighten effluent standards so as to reduce river pollution caused by industrial wastewater.

Furthermore, the EPA has been continuously promoting the use of livestock fermentation liquid and sediments as farmland fertilizer. As of the end of 2016, there were a total of 22 livestock farms whose farmland fertilizer usage applications had been approved, totaling 146 hectares of irrigated agricultural land. The EPA expects to reach the goal of approving farmland fertilizer usage applications from at least 100 livestock farms in 2017, and to continually reduce the wastewater effluent discharge into rivers.



Severely polluted river segments fell to 2.5% overall for 50 major rivers in 2016

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