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Feature Article

Mobile Source Pollution Control in Taiwan

Mobile pollution source control is one of the EPA’s major air pollution control targets. To control pollution from motor vehicle emissions, the central government is currently taking measures in the following five directions: controls on new vehicles, controls on in-use vehicles, promotion of clean fuels, promotion of low-polluting vehicles and traffic control measures. The measures add up to comprehensive controls for motorcycle pollution emissions from the design and production stages all the way to end-use, for effectively reducing the air pollution from mobile sources and improving air quality. To control vehicle exhaust pollution, the Taiwan government has continued to push for the use of clean vehicles and clean fuels, and also works on the planning and utilization of mass transportation as a medium-term goal. In the long term, the EPA seeks to pursue sustainable development and reduce the use of private motor vehicles.

As the economy developed and gross domestic product (GDP) grew, the public’s consumer demands have also grown, leading to the rapid growth of motor vehicle ownership. In Taiwan, air pollution in densely populated urban areas largely stem from motor vehicle emissions, which not only severely affect urban air quality but also harm the public’s health. Mobile pollution source control has thus become a major air pollution control project.

Currently, Taiwan’s mobile pollution source control is promoted in the following five major directions:

1. New vehicle controls: tightening emission standards in phases; inspections of new vehicle models; random inspections of new vehicles
2. In-use vehicle controls: includes regular motorcycle emission inspections; random inspections on motorcycles and diesel vehicles; encouraging reporting of vehicles with visible exhaust smoke; speeding up the phasing-out of two-stroke motorcycles; and, promoting in-use diesel vehicle maintenance systems

In This Issue

Feature Article: Mobile Source Pollution Control in Taiwan.....	1
Environmental, Police, and Mobile Vehicle Agencies Jointly Crack Down on Noisy Modified Vehicles.....	3
Amendments to Effluent Standards Preannounced.....	4
Amendments to Water Pollution Control Measures and and Test Reporting Management Regulations Preannounced.....	5
Amendments to Water Pollution Control Measures and Permit Application Review Management Regulations Preannounced.....	6
Environmental Protection Units Mobilized to Patrol Areas Affected by Bird Flu.....	9
Amendments to Vehicular Air Pollutant Emission Standards Preannounced.....	9
EPA Holds Forum to Enhance International Participation to Deal with Climate Change.....	10
English Version of Environmental Info Push App Available for Free Download.....	11
Briefs.....	12

3. Promoting the use of clean fuels: formulating control standards for gasoline and diesel; collecting air pollution fees for vehicle fuels; subsidizing liquefied petroleum gas; and, bans on illegal fuels

4. Promoting low-polluting vehicles: promoting the use of electric bikes, electric cars, and electric buses; promoting the establishment of battery swap systems; and providing subsidies for the purchase of electricity-assisted bicycles and electric bikes

5. Traffic control measures: encouraging the use of mass transportation systems; promoting environmentally-friendly driving habits, idling stop systems, and switching off of engines when parked

Motorcycle control measures

The number of motor vehicles in Taiwan started growing year by year since 2003 and reached a peak of 22.34 million in 2012. Despite a slight decrease after 2013, statistics show there were still 21.51 million motor vehicles at the end of December 2016, about 1.16 times that at the end of 2003 (18.5 million). The majority of these motor vehicles are motorcycles, which reached approximately 13.66 million by the end of December 2016, comprising 63.5% of the total number of motor vehicles. The ownership ratio has increased from 81.8 motor vehicles per 100 people in 2003, to 91.4 per 100 people at the end of December 2016.

Motorcycles are the most common private vehicle in Taiwan and have become the largest and densest mobile pollution source. Therefore, the EPA hopes to reduce pollution emissions from motorcycles by implementing the following control measures:

1. Strengthening emission standards

The Sixth Phase of Motorcycle Emission Standards was announced on 28 October 2013, and took effect on 1 January 2017. Also announced on the same day, the Seventh Phase standards will take effect on 1 January 2021. Major control measures include inspections for in-use motorcycles and random testing for new ones. Inspections for new models are separated into inspections for prototypes and mass production models. Standards for carbon dioxide (CO), hydrocarbon (HC), and nitrogen oxide (NO_x) from motorcycle exhaust pipes are tested both

when vehicles are running and idling. Standards for particulate matters are tested both visually and with instruments.

2. Regular inspections, audits, and roadside random inspections

A. Regular inspections: Local environmental bureaus mail out notices to motorcycle owners to go to bureau-certified stations for inspections. Vehicles that fail regular inspections are to improve on their shortcomings and pass a re-inspection within a month.

B. Audits and random roadside inspections: Flexible inspections during roadside pull-overs are done on only a select few in-use motorcycles. However, this remains the most effective way to immediately reduce pollution emissions. Only by expanding regular motorcycle maintenance and inspection systems, which place all in-use vehicles under strict controls, can it be ensured that in-use motorcycles that have been in use for some time are in compliance with emission standards.

In addition to regular inspections, roadside pull-overs, and encouraging the phasing-out of old motorcycles, it is also necessary to reinforce emission standards for new vehicles in different phases. As all new motorcycles since 2017 come with on-board diagnostics (OBD) that give reminders for maintenance, the EPA will examine the possibility of replacing regular inspections with OBD.

3. Inspections for new vehicles and random testing and controls

Management of new vehicles includes inspection of new models, random testing of new vehicles, and inspections for polluting components. Whether vehicles are made domestically or imported, enterprises must apply for the *Compliance Certification for Gasoline Vehicle Emissions Inspections* (汽車車型排氣審驗合格證明) from the EPA, with all documents for the new models and test reports showing compliance with emission and endurance standards. Only when reviews are complete and the certification is granted can sales of new models commence.

For motorcycle manufacturers and importers, inspections for new vehicles are carried out every

year by randomly picking out vehicles for pollution emission testing at designated inspection institutes, in order to verify that all new motorcycles on sale comply with emission standards. If a new vehicle fails random testing, the EPA will withdraw the model's compliance certification and order enterprises to recall potentially unqualified motorcycles that have been sold to undergo modifications within a given period of time.

In addition, every year, in-use motorcycles within their warrant periods are recalled for pollution emission testing to make sure vehicles are compliant with emission standards throughout their warrant periods. Should any vehicles fail the testing, manufacturers or importers will be mandated to recall potentially unqualified motorcycles that have been sold to undergo modifications within a given period of time.

Through the above measures, comprehensive controls at all stages for motorcycle pollution emissions – from design and production to in-use – are implemented.

Future Outlook

Promoting the use of mass transportation systems and reducing the use of private vehicles can effectively reduce pollution from motor vehicles. For future motor vehicle emission control, the EPA will keep pushing for the use of clean vehicles and clean fuels, with planning and utilization of mass transportation systems as the medium-term goal. Moreover, it will seek to reduce the use of private vehicles as the long-term sustainable development goal, in order to diminish pollution from traffic and move toward a truly clean planet.

Noise Control

Environmental, Police, and Mobile Vehicle Agencies Jointly Crack Down on Noisy Modified Vehicles

In 2016, the EPA combined the forces of environmental, police, and motor vehicle agencies to jointly conduct roadside inspections in a crackdown on noisy modified vehicles. A total of 744 inspection sessions were carried out to check 26,963 vehicles. Noise tests were done on 4,274 vehicles, of which 2718 were found to be deficient in noise control and whose owners were reported for a violation. This comprises a violation reporting rate of 63.6%, a 12% growth over that of 2015, indicating that experience and improved skills had been accumulated through the joint operation to pick out violating vehicles more effectively.

According to the EPA's statistics, in 2016 Taoyuan City reported the most noise violation cases, at 1,286 vehicles. Among all the noisy vehicles reported in Taiwan in 2016, 110 decibels was the loudest noise recorded. Considering the high number of violations and noise level, it is important to continuously crack down on inappropriately modified vehicles to prevent excessive noise.

The EPA stated that, according to Article 26 of the *Noise Control Act* (噪音管制法), vehicle owners or users are to be penalized with fines of NT\$1,800-3,600 for not complying with the *Motor Vehicle Noise Control Standards* (機動車輛噪音管制標準). Violators failing to improve before the given deadline will be subject to further penalties for each occurrence. Also, the *Road Traffic Management and Penalty Act* (道路交通管理處罰條例) specifies that

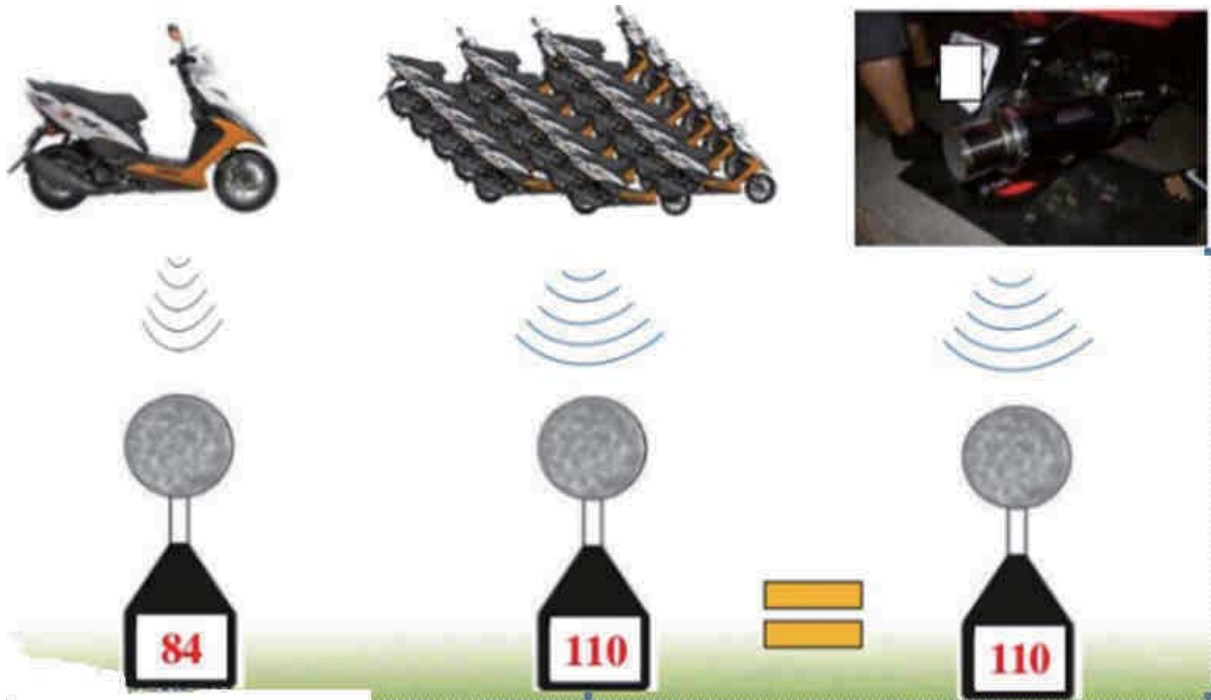
vehicle owners or drivers are to be fined NT\$6,000-24,000 if found to be producing noise by dismantling mufflers or other means, and can be banned on the spot from driving the vehicle. During joint operations of environmental, police, and motor vehicle agencies, law enforcement officers issued penalties based on the most serious offenses found on-site.

In 2017, the EPA will coordinate a trial run with several counties and cities aimed at preventing reported vehicles from reinstalling modified exhaust pipes. Violations will be reported and penalties will be issued during roadside inspections. The EPA urges owners not to test their luck. Since inappropriately modified vehicles greatly disturb the peace, violators will surely receive punishment in accordance with relevant regulations.

Noise from **one** unmodified scooter

Noise from **398** unmodified scooters starting simultaneously

Noise from **one** inappropriately modified scooter



▶ Diagram of modified vehicle noise (decibels)

Water

Amendments to Effluent Standards Preannounced

On 10 February 2017, the EPA preannounced amendments to the *Effluent Standards* (放流水標準), aimed at strengthening risk management and achieving higher water quality in water bodies. They include merging control standards with existing standards for specified industries, and added or tightened controls on heavy metals, ammonia nitrogen, and harmful substances.

The *Effluent Standards* took effect in 1987 and have been reviewed and revised 16 times since then. Between 2011 and 2016, standards were set for the wafer and semiconductor industry, optoelectronic materials and component manufacturers, the petrochemical industry, the chemical industry, science park sewer systems, and petrochemical industrial park sewage systems, making substantial contributions to water pollution control. The need to revise the *Effluent Standards* has arisen again because farmlands are becoming contaminated due to insufficiently stringent heavy metal standards for river water quality.

ameliorate this problem, tighter controls on ammonia nitrogen have been formulated for: nut and bolt manufacturing in metal finishing or electroplating; manufacturing of leather products from rawhide in the tanning industry; landfills and power plants; and, industrial park sewage systems (excluding petrochemical industrial parks). Control regulations on ammonia nitrogen and total nitrogen discharge are also set for public sewage systems. Moreover, the EPA has formulated the total quantity control for nitrogen and phosphorous discharged from hotels located in water source/water quality/water supply protection zones.

In addition, ammonia nitrogen discharged into rivers also depletes dissolved oxygen in the water. To

Discharge of highly colorful wastewater often causes color change of water bodies and thus has negative

impressions on the public, so the EPA has tightened control limits on true color saturation for paper mills and the textile industry. Controls on free residual chloride are also added to keep enterprises from using too much bleach and harming aquatic life.

Even if effluents comply with control standards after being treated, the EPA considers the bioaccumulative nature of heavy metals and has strengthened control limits on nine of them: cadmium, lead, total chromium, hexavalent chromium, copper, zinc, nickel, selenium and arsenic. Regulated targets are enterprises in seven industries (wafer and semiconductor manufacturing, optoelectronic materials and component manufacturing, chemical industry, basic metal industry, metal finishing, electroplating, and printed circuit board manufacturing) with manufacturing that involves heavy metals and discharges reaching a certain scale, as well as sewage systems in science parks, petrochemical industrial parks, and other industrial parks. Regulations governing tin are also added, with control limits based on discharge amounts.

As new optoelectronic materials and component manufacturers continue to relocate in industrial parks other than petrochemical industrial parks, controls on indium, gallium, and molybdenum have been added. Taking references from the US EPA's stricter controls for coal-fired steam power plants as well as its management project for the *Minamata Convention on Mercury* (水俣病公約), the EPA has strengthened control limits for mercury, arsenic, and selenium for coal-fired power plant generators and wastewater which is produced from flue gas desulfurization (FGD) processes and then goes into treatment plants.

To streamline the *Effluent Standards* and standards for specified industries, all the aforementioned standards are combined into *the Effluent Standards*, with control items and limits for different industries listed in attached tables 1-14. Meanwhile, effluent standards are deleted for six specific industries, including optoelectronic materials and component manufacturing.

 Amended effluent limits for nine heavy metals

Regulated targets	Item	Limit (mg/L)	Effective date
wafer and semiconductor manufacturing, optoelectronic materials and component manufacturing, chemical industry, metal basic industry, metal finishing, electroplating, printed circuit board manufacturing, sewage systems in science parks, petrochemical industrial parks, and other industrial parks	cadmium	0.02	1 July 2020
	lead	0.5	
	total chromium	1.5	
	hexavalent chromium	0.35	
	copper	1.5	
	zinc	3.5	
	nickel	0.7	
	selenium	0.35	
	arsenic	0.35	

Water

Amendments to Water Pollution Control Measures and Test Reporting Management Regulations Preannounced

The *Water Pollution Control Measures and Test Reporting Management Regulations* (水污染防治措施及檢測申報管理辦法) have been revised five times since they were first promulgated on 16 October 2006. The revisions have led to the establishment of a management system for a variety of water pollution control measures. In addition, they have also led to the utilization of livestock waste, thus reducing pollution from source and improving river water bodies.

To boost the utilization efficiency of livestock waste and promote a circular economy in the livestock industry, it is necessary to make changes to the current management regulations for livestock wastewater discharge, leakage, overflow, recycling and treatment. The EPA is also taking practical measures to avoid disputes upon the execution of the law. For example, the EPA is: formulating more reduction measures for livestock wastewater effluent; removing reutilization restrictions for livestock waste on farmland; integrating the management of livestock waste leakage and overflow; reinforcing wastewater recycling; and, strengthening the management of the supplementary water sources involved. The main points of the amendments are as follows:

1. Integrating control and emergency measures in case of leakage and overflow
2. Livestock enterprises that keep their animals outdoors shall take reduction measures for wastewater run-off
3. Clarifying that the usage of livestock waste fermentation liquid and sediment as farmland fertilizer, and the transportation of wastewater, complies with the *Effluent Standards* for watering plants that are not subject to the regulations set forth in Chapter 5.
4. Livestock enterprises that adopt waste reutilization methods on farmland will no longer be required to establish wastewater pretreatment facilities, and the rules on waste disposal into the soil will also be suspended.
5. Strengthening the management of wastewater recycling and reuse by restricting enterprises that do not comply with the wastewater treatment standards, and establishment of treatment facilities from reusing the wastewater in facilities not involved in the production process. Additionally, if supplementary water is to be used, enterprises should submit reasonable explanations and records of the water sources and amounts. Any dilution of effluent is strongly prohibited. The amendments also clarify the situations under which wastewater is not allowed as well as the wastewater purification criteria for the wastewater recycling system.
6. The livestock industry shall take wastewater effluent reduction measures. Newly established farms are forbidden from discharging wastewater into surface water bodies. As for existing farms, wastewater discharge should be reduced to at least half, or lower, of the currently permitted total effluent within five years, and to a quarter within ten years.
7. Pig farms that have less than 200 pigs are required to submit a wastewater management plan.
8. Coal-fired power plants shall report mercury levels contained in their coal, along with other related information. Also, power plants are required to submit a management plan for mercury control when the mercury value of the coal exceeds a certain level.
9. The following industries are to collect and treat their wastewater based on the pollutant characteristics: the wafer fabrication industry, the semiconductor manufacturing industry, the optoelectronic materials and components manufacturing industry, the printed circuit board manufacturing industry, electroplating industries and the metal finishing industry.
10. The documents required for wastewater reports have been simplified to encourage enterprises to submit their reports in accordance with the law.

Water

Amendments to Water Pollution Control Measures and Permit Application Review Management Regulations Preannounced

To combat illegal practices while encouraging law-abiding enterprises, the EPA plans to simplify permit applications for wastewater discharge. According to the draft amendments to the *Water Pollution Control Measures and Test Reporting Management Regulations* (水污染防治措施計畫及許可申請審查管理辦法), permit management will be categorized based on the type of industry. Also, permits will not be issued to enterprises with multiple serious violations.

The EPA preannounced draft amendments to the *Water Pollution Control Measures and Permit Review Regulations* on 24 February 2017. The purpose of the amendments is to encourage compliance with the law by simplifying wastewater permit application procedures and reinforcing review and management of applications. The main points of the amendments are as follows:

1. Water pollution control plans or permit documents

differ according to the type of the industry. There are 3 types of permit: specific, general and simplified. The industries that will need a specific permit are those required to disclose the pollutant content of discharges and information in accordance with Article 14-1 of the *Water Pollution Control Act*. Because of the high potential (pollution) risks raised by those industries, they will not only need to perform system function tests but also acquire the signature of a qualified engineer for the permit application documents.

 *Standards for approving daily maximum wastewater production and service range*

Classification	Principle factor
Enterprises with wastewater treatment facilities	
(1) New applicants who require a trial run	When the treatment capacity in function tests exceeds 80 percent of the daily maximum production stated in the application, the daily maximum production will be permitted according to the value in the application. When the tested capacity is below 80 percent of the daily maximum production applied for by enterprises, the permitted maximum will be 1.2 times the test capacity.
(2) New applicants who do not require a trial run	The permitted maximum production is based on the applied value.
(3) Applicants for modification or extension	The maximum production will be permitted in accordance with the original permitted value. However, if function tests are involved, then it will be permitted based on the principles stipulated in 1-(1).
(4) Applicants that have been reviewed by the competent authority	The maximum production will be permitted in compliance with the control standards.
2. Enterprises equipped with wastewater sewer systems	The maximum production is permitted according to the application documents for being listed on the control list or proof of being equipped with a sewer system.
3. Enterprises equipped with storage systems	The maximum production is permitted based on the maximum capacity of the storage system.
4. Enterprises that use the service of a wastewater treatment organization	Enterprises shall not commission more than the leftover treatment amount to a treatment organization
5. Enterprises that provide wastewater treatment services	The daily maximum leftover amount shall not exceed the permitted daily maximum treatment amount minus its own permitted maximum production.
6. Enterprises that discharge wastewater into private water bodies or irrigation channels	The maximum production will be decided by the industry competent authority or the private water body management entity and its owner
7. Wastewater treatment facilities that require function testing	The maximum production will be based on the test results.

Moreover, the EPA also tightened the regulation that requires an expert's review of the pollutant information that enterprises are to disclose.

Industries that fall under the general permit category are those with complicated wastewater characteristics such as industrial parks, the dyeing and finishing industry, the leather manufacturing industry, the gold watch manufacturing industry, electroplating industry, and others. Among the enterprises mentioned above, only those with wastewater exceeding 10,000 cubic meters per day (CMD) or with original wastewater that contains more than 100 CMD of toxic substances will be required to conduct system function tests with the signature of a qualified engineer.

The simplified permit is for enterprises with simple wastewater characteristics such as the gravel manufacturing industry, livestock industry and service industry. For the abovementioned industries, trial runs, function tests and an engineer's signature are not required. Even though the EPA has made the standards concerning an engineer's signature and function tests easier for enterprises in the general and simplified permit category, serious violators will still be tested for system functionality and require a signature from a qualified engineer.

2. Water pollution control plans or permit documents will be suspended if any of the following situations occur: committing multiple violations within 3 years; being suspended by the competent authority at least twice; committing serious violations more than twice; or, being penalized for serious pollution. Once a suspension is issued, an enterprise will not be able to apply for three years starting from the date of the suspension. Also, to prevent enterprises from evading their punishment, the address where any of the abovementioned circumstances take place cannot be used for control plan or permit application.

3. The EPA has simplified the conditions for the modifications to be made before receiving a permit and for the required function tests, such as the following circumstances: the replacement of old wastewater treatment facilities; improvement of accessory equipment at wastewater treatment facilities as well as livestock waste bio-gas collection bags and storage tanks; and, for facilities that reduce water consumption and wastewater production but are unrelated to wastewater treatment, modifications

of operating parameters and other registered data can be done after the permits are issued. Although reduction of maximum water consumption and wastewater production levels or improvement of wastewater quality can change operating parameters and other related information of the wastewater treatment facility, functionality tests will not be required since the above circumstances do not reduce the functionality of the wastewater facility.

4. To increase review efficiency, the competent authority should provide guidance and one-time review counselling if application documents are incomplete.

5. To encourage enterprises and operators of sewage systems to comply with the law, procedures are simplified for the application, modification, and extension of water pollution plans and permit documents for those who have never received a penalty from the competent authority under the *Water Pollution Control Measures and Test Reporting Management Regulations*, in the year prior to the application date. For instance, enterprises with general permits are qualified to apply for simplified permits and are required to only disclose control plans and permit documents issued by the competent authority.

6. To encourage enterprises and operators of sewage systems to comply with the law, enterprises conducting operations outside the permitted parameters may be granted a relief or reduction of the penalty based on the judgment of the competent authority for each individual case within 6 months after the draft amendment is announced, only if they have never been previously reported or found for their violations by the competent authority, and have not caused any actual pollution.

With the amendments, about 4,500 enterprises will be eligible for applying for the simplified permit. The competent authorities can focus resources on the investigation and management of illegal enterprises and increase review efficiency. The EPA also points out that law-abiding enterprises can enjoy simpler and cheaper application procedures.

Environmental Protection Units Mobilized to Patrol Areas Affected by Bird Flu

In response to the recent outbreak of avian influenza, the EPA has deployed emergency response units to control the affected areas and prevent further spread of the disease. Local environmental protection bureaus are to strengthen patrols in local poultry farms to prevent illegal dumping of carcasses and to assist agricultural agencies in disease control. To contain the disease and safeguard public health, the EPA has formulated the 2016 Avian Influenza Prevention and Patrol Plan, which was announced by local environmental protection bureaus in cooperation with the Central Emergency Response Center for Avian Influenza. According to the plan, poultry deliveries in the nation were banned for seven days starting 17 February 2017, during which patrols were reinforced.

After the recent avian flu breakout, the EPA's Bureau of Environmental Inspection has been cooperating with the Seventh Special Police Corps and local environmental protection bureaus to conduct inspections in the vicinity of poultry farms for carcasses dumped illegally. Also, unmanned aerial vehicles have been deployed to conduct surveillance, collect evidence and prevent any further environmental problems that may arise. To better control the disease, the EPA has sent investigation personnel to conduct inspections in person. If a large amount of carcasses are found, inspectors are to immediately contact animal health inspection authorities. The animal health inspection authorities will provide assistance in burning poultry carcasses and disinfecting the environment. The EPA expects to prevent the disease from further spreading by combining forces with other government agencies.

The EPA indicates that it will continue to work

closely with agricultural agencies to carry out lateral communications and disease control. The northern, central, and southern branches of the Bureau of Environmental Inspection have been working in collaboration with local environmental protection bureaus to reinforce patrols around affected areas and sites with high potential for the occurrence of illegal dumping. This method can not only prevent illegal dumping of carcasses, but can also speed up emergency response if any illegal activity is discovered.

Illegal dumping of carcasses can set back disease control and contribute to propagation of the virus. Therefore, the EPA points out that illegal dumping of poultry carcasses is in violation of the storage, clearance, and disposal regulations stipulated in Article 36 of the *Waste Disposal Act* (廢棄物清理法) and can incur fines between NT\$6,000 and NT\$30,000 in accordance with Article 52.

Air

Amendments to Vehicular Air Pollutant Emission Standards Preannounced

The EPA formulated the draft of the amendments to the *Vehicular Air Pollutant Emission Standards* (交通工具空氣污染物排放標準) regarding railway emissions to continually ameliorate the air pollution caused by transportation, and to stay aligned with international regulations concerning rail management. The main points of the amendments are as follows: setting air pollutant emission standards for railcars or locomotives with a net power greater than 130 kilowatts; and, adding control values for carbon monoxide, hydrocarbons, nitrogen oxides and particulate matters.

The EPA has been very active in air quality improvement, so the *Vehicular Air Pollutant Emission Standards* have been tightening. However, only particulate pollutant emission standards (opacity %) for trains and ships are included in Article 8 of

the current *Rail Air Pollutant Emission Standards*. Hence, the EPA drafted amendments to Article 8 of the *Vehicular Air Pollutant Emission Standards* by referencing the control strategies of the EU and the US.

The main points of the amendments are as follows: setting air pollutant emission standards for railcars or locomotives with a net power greater than 130 kilowatts; adding control values for carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NO_x) and particulate matters (PM); adopting U.S. standards

and testing methods for Tier 4 engines in off-road equipment; and adopting the EU's regulations on testing procedures and the certification proof for related subsequent amendments of Directive 97/68/EC.

Emission standards for trains and ships

Vehicles	Air pollutant emission standards						
	Category	Drive cycle testing (g/kWh)					Visual test
		CO	HC	NO _x	HC+NO _x	PM	Particulate matters (opacity %)
Trains							40
	Railcars with a net power greater than 130 kilowatts	3.5	0.19	2.0		0.025	
	Locomotives with a net power greater than 130 kilowatt	3.5			4.0	0.025	
Ship							40

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. In spite of this, various governmental agencies of Taiwan have

actively tried to break through these restrictions, seeking meaningful participation in international conventions. 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.

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.

News Briefs

Waste Flow Report to Be Extended to Supermarkets and Megamarkets

On 16 February 2017 the EPA preannounced the draft amendments to the *Type, Scope and Scale of Businesses Required to Submit Water Pollution Control Measures* (應先檢具水污染防治措施計畫之事業種類、範圍及規模). The purpose of the current amendments is to align with the draft amendments to the *Water Pollution Control Measures and Permit Application Review Management Regulations* (水污染防治措施計畫及許可申請審查管理辦法), which divide applicants into three categories—namely, special permit, general permit, and simple permit—to substantiate the implementation of appropriate practice management. The threshold for a general permit has been simplified, and businesses that are serious offenders are added as subjects required to submit their water pollution control measures.

The major amendments are as follows:

1. In accordance with Article 14-1 Paragraph 1 of the *Water Pollution Control Act* (水污染防治法), businesses which have been designated and announced by the central competent authorities to disclose information on effluent discharge volumes and concentrations of pollutants should submit water pollution control measures ahead of other businesses.
2. Businesses that are required to submit water pollution control measures include: those whose daily output of wastewater exceeds 10,000 m³, or whose daily output of wastewater exceeds 100 m³ but contains hazardous substances. In addition, businesses which have violated the *Water Pollution Control Act* and have been ordered to cease operations or businesses, have committed serious offenses, or have previously falsified report records also fall into this category.
3. Subjects listed on items 5-9 and 11-12 will be exempt from the need to submit water pollution control measures due to the simple nature of their wastewater and their need for a simple permit.
4. Hospitals and medical institutions are classified as businesses that require the general permit. Hence, whether water pollution control measures are required should be decided by the quantity and content of their wastewater.

Amendments to Prohibitions on Activities Causing Water Pollution Preannounced

On 16 February 2017, the EPA preannounced amendments to the *Prohibitions on Activities Causing Water Pollution* (禁止足使水污染行為). The EPA discovered recently that there are some unscrupulous industrial operators who discharged colored wastewaters, seriously affecting the quality of water bodies. Yet, due to the fact that these enterprises are either not on the control list of the *Water Pollution Control Act* (水污染防治法) or because the scales do not reach the scale for control, these operators cannot be brought to justice. The EPA is therefore adding new control targets in the amendments to cover industries involved in processes that produce colored wastewater, as well as chemical substance preparation, barrel and trough cleansers, or other specified targets whose business scale do not reach the scale for control. If the pollutant concentration in the effluent of these enterprises exceeds imposed limits, this will be considered as activity sufficient to cause water pollution. Offenders will be subject to a fine of NT\$30,000 to 3 million.

The major amendments are as follows:

1. Enterprises involved in incense-making, dyeing, or other processes which produce colored wastewater shall be considered as engaged in activity sufficient to cause water pollution if the color of effluent reaches 550 ADMI rating or higher.
2. Enterprises involved in chemical substance preparation, barrel or trough cleansing, food production, fermentation or livestock slaughtering that do not reach the scale for control should be considered as engaged in activity sufficient to cause water pollution if their effluent does not meet the standards for eight control items (such as biochemical oxygen demand of 80 mg/L, chemical oxygen demand of 250 mg/L, suspended solids of 80 mg/L, color of water at 550 ADMI, and copper content of 3 mg/L).
3. The river section of a work in progress refers to a construction project that is actually being implemented. The water sampling points are to be determined by the upstream and downstream engineering work. The appropriate points are 10 meters upstream and 10 meters downstream of the construction site.

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