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Feature Article

Marine Pollution Control in Taiwan

With regard to marine pollution control, Taiwan is limited both in emergency response manpower and resources. To enhance capacities in this area, the EPA has been effectively employing high-tech tools such as computer simulation models and remote monitoring that can quickly provide a more accurate picture of the scope and movement of oil spills. The EPA is also working diligently on improving emergency response strategies, employing advanced technology and equipment, following relevant international regulations, and building greater international cooperation, including the sharing of experiences on pollution removal.

Taiwan is surrounded by seas rich in marine resources and biodiversity. However, Taiwan also sits amid important Asia-Pacific shipping lanes used by many large vessels. Every day approximately 200 ships enter or leave Taiwan's international ports and around 2,500 ships of all types travel close to Taiwan. During the typhoon season or when the seasonal northeast winds are blowing strongly, it is not uncommon for ships to hit coral reefs, get grounded on shoals, or even spill pollutants into the sea. Such incidents are a major threat to Taiwan's marine ecosystems and resources.

Legal Basis for Marine Pollution Control

According to International Maritime Organization (IMO) analysis, about 44% of marine pollution originates on land, 33% originates as atmospheric pollution, 12% come from ships, 10% from ocean dumping, and 1% from marine construction projects. The United Nations Convention on the Law of the Sea (UNCLOS) outlines the international obligations of signatory nations and their responsibilities to cooperate at regional and global levels to protect the marine environment.

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As the body responsible for formulating, guiding, supervising and conducting marine pollution control strategies as necessary, the EPA referred to the UNCLOS and formulated a draft of the *Marine Pollution Control Act* (海洋污染防治法), which was then passed by the Legislative Yuan and promulgated on 1 November 2000. This was a monumental step in Taiwan's efforts to prevent marine pollution, protect the marine environment and use marine resources in a sustainable manner.

Marine Pollution Control Measures

The EPA began training personnel in marine pollution emergency response after the Plan was approved. Through experience exchanges with marine pollution emergency response organizations and experts from developed nations, the EPA has improved the management and decision-making capabilities of government personnel at all levels. Every year the EPA holds training sessions for marine pollution emergency response personnel, including courses accredited by the IMO on responding to spills of oil and other hazardous or noxious substances.

Taiwan's *Marine Pollution Control Act* (海洋污染防治法) covers both pollution control and pollution management, including marine pollution prevention management and emergency response. The Act

includes measures to prevent pollution incidents from transport of oil, marine construction projects, and land-based sources. To these ends, the EPA has adopted a number of advanced tools to strengthen cooperation between public and private sector entities that conduct aerial and marine patrols. Other technologies employed include the use of satellite remote sensing and unmanned aerial vehicles (UAVs) to facilitate inspections of pollution sources suspected of illegal discharges.

Using Simulation Software and Remote Sensing for Marine Pollution Control

Conditions in the marine environment can change very quickly. A successful cleanup operation depends upon the capability of response personnel to rapidly decide on optimal response measures after determining, in the immediate hours and days after an incident, the likely scope and dispersal patterns of an oil slick.

The EPA relies on OILMAP simulation software to predict oil slick dispersal patterns as quickly as possible. Data for a spill, such as type of oil, volume, and so on, is entered along with background environmental data such as the location of the spill, wind factors, direction and strength of ocean currents, and so on. The software can simulate changes in



▶ Speakers of the 2015 Marine Pollution Response and Practices International Workshop



▶ *Marine pollution emergency response personnel train in France at the Centre of Documentation, Research and Experimentation on Accidental Water Pollution*

dispersal at different times of day to better predict the movement of a slick. It also helps with predicting the impact of a spill, including: areas likely to be affected and probable volumes of oil; amounts of oil that could spread along shores and into waterbodies; and impacts on the air of a given area.

OILMAP simulation software has been used to assist with the responses to all recent major marine pollution incidents near Taiwan, including: an oil spill from the *Tzini*, that ran aground near Yilan in 2006; an oil spill from the *Jui Hsing*, near Keelung in 2011; an oil spill from the *Oberon*, that ran aground near Penghu in 2012; the sinking of the research vessel *RV OR5*, near Penghu in 2014; and, the running aground of two container ships this year, the *Yun Hai* and the *TS Taipei*. Knowledge of likely pollutant dispersal patterns allowed emergency response personnel to rapidly execute measures appropriate to the locations and conditions of the incidents, thus better protecting the marine environment.

Satellite remote sensing has also become more frequently employed for many types of environmental monitoring in recent years. To enhance marine pollution monitoring and emergency response capability, the EPA now employs satellite monitoring and unmanned aircraft systems (UAS) to evaluate and approve marine pollution prevention measures, monitor illegal discharges, and provide emergency response assistance. Conventional surface inspections of marine pollution incidents are invariably limited spatially and thus cannot give a full picture of the pollution. Remote monitoring from above allows

for a clear view of the scale of the pollution, facilitating a shorter response time. The three types of remote monitoring technology currently employed in Taiwan are satellite imagery, UAS, and aerial photography.

Sharing Knowledge and Experience through International Exchanges

Every year Taiwan holds the International Symposium on Marine Pollution Response, convening experts from around the world. The EPA also sends staff overseas every year for training courses on marine pollution emergency response. The training also helps trainees to establish connections with people who are also in charge of marine pollution control work in other ministries in order to improve interministerial communication. The EPA also maintains regular exchanges and seeks new contacts with related international organizations to build international partnerships, keep abreast of the latest developments in marine pollution control, and be able to call up help and material support, if necessary, in dealing with future pollution incidents.

In 2014, for example, EPA personnel went to France to take part in a marine oil and chemical spill response personnel training course held at the Centre of Documentation, Research and Experimentation on Accidental Water Pollution (Cedre), an IMO-accredited training organization. Cedre is one of the few centers in the world that offers specialized training facilities and equipment training to give trainees the hands-on experience necessary for developing the skills to respond to real-life emergencies.

Recent Achievements in Marine Pollution Control

The EPA has been helping port management agencies to strengthen their oily water management, wastewater treatment and environmental monitoring capabilities in port areas. The EPA is also supervising the work of local environmental protection bureaus in improving pollution sources upstream of port areas. In 2015, the EPA completed 4,409 inspections of ship-based or port-based pollution sources, of which 39 were reported for causing marine oil pollution. In 2015, the EPA held five emergency response training courses to train personnel how to deal with spills of oil or chemicals at sea. The 174 trainees came from the Coast Guard Administration of the Ministry of the Interior (MOI), the Ministry of Transportation and Communications (MOTC), the MOTC's Maritime and Port Bureau, the Fisheries Agency of the Council of Agriculture, and local environmental protection bureaus. On 27 October 2015, the EPA held the 2015 Marine Pollution Response and Practices International Workshop that was attended by 120 delegates, including experts from Taiwan, the EU, France, the US, and Australia, to share their knowledge and experience in marine pollution response.

In addition to oil and chemical spills, there is also the problem of alien species carried in the ballast water and sediment brought in by ships. Alien species may impact local marine and harbor ecosystems, and may also bring in pathogenic microorganisms. To address these concerns the EPA has been working with the MOTC to implement ballast water management. On 26 January 2016, the EPA announced the *Regulations Governing Dischargeable Substances and their Management According to Article 3 Paragraph 6 of*

the Marine Pollution Control Act (海洋污染防治法第3條第6款規定之排洩物質及其管理規定), and the *Taiwan Territorial Waters as Maritime Control Zones in which Changing Ballast Water is Forbidden and Its Pollution Control Measures* (我國領海範圍內為禁止船舶壓艙水交換之海洋管制區及其污染管制措施)。

Future Task: Capacity Enhancement with Limited Manpower

In light of the limited manpower and resources available to deal with marine pollution incidents, how to effectively apply high-tech approaches to enhance overall marine pollution response capability is a problem that is taxing government agencies worldwide. Fortunately, technologies have developed rapidly – especially computer technology. Numerical simulation models drastically reduce the time needed to predict how oil spills or other pollutants will disperse on the ocean's surface and allow decision makers to respond more effectively.

In addition, optical imaging and radar satellite remote sensing is now being used to provide highly accurate data for modeling analysis. Capable of monitoring large areas over long periods of time, these are now the best tools available for tracking illegal activities at sea that cause marine pollution. A major issue facing the government is how to prevent, eliminate, or reduce the impact that major marine pollution incidents can pose on human health, marine ecosystems, and physical assets. Choosing appropriate response strategies, techniques, and cleanup equipment, as well as closely following the development trends of international marine regulations and agreements, are particularly important and will be the focal points for Taiwan's future marine pollution control capacity building.

Water

Amendments to Regulations for Water Pollution Control Fees Collection Preannounced

It has been almost a year since the EPA began collecting water pollution control fees, and the intervening period has seen a number of issues arise that have required discussion with the stakeholders involved. After weighing various suggestions, on 1 April 2016 the EPA preannounced revisions to the *Regulations Governing the Collection of Water Pollution Control Fees* (水污染防治費收費辦法). The amendments will take effect on 1 July 2016.

The *Regulations Governing the Collection of Water Pollution Control Fees* were last amended on

31 March 2015, and since 1 May 2015 the EPA has been collecting water pollution fees from operators

of industrial park sewage systems and enterprises of all industries except livestock rearing. However, a number of issues appeared regarding the paying and reporting of fees, report reviews and auditing of payments. To tackle these issues and improve the fee calculation method for coal-fired power stations that employ seawater flue gas desulfurization for air pollution control, on 1 April 2016 the EPA preannounced amendments to the *Regulations Governing the Collection of Water Pollution Control Fees*. The amendments will take effect on 1 July 2016.

The main points of the amendments are as follows:

1. The addition of the method of calculating water pollution fees for coal-fired power stations that employ the seawater flue gas desulfurization process in their air pollution control facilities, and clarification of documents needed for review.
2. Considering that for a given industry the values of effluent standards are different from those of the marine discharge pipe effluent standards, the EPA has added a new calculation method to give preferential fee rates for effluent discharged directly into the sea.
3. Effluent quality will henceforth be assessed using the maximum values tested by the competent authority. Amendments have also been made to the differential ratio of the reported harmful substance values to the tested ones to minimize disputes over test data.
4. Provisions have been added so that actual discharged effluent volumes and the number of operation days can be used for fee calculation if adequate evidence is provided to support the claim, so as to make fee calculation more reflective of the situation on the ground.
5. To simplify the fee paying procedure, the requirement that fee paying reports and payment invoices must be submitted online has been removed. Reimbursement of excess payments of over NT\$2,000 will need to be applied for.
6. Water pollution control fees will be waived for waste bathing water from hotels and restaurants where the wastewater has been kept separate from other effluent and filtered to remove hair and other suspended solids. The fees will also be waived for wastewater from newly established enterprises during their approved initial trial period.
7. The central competent authority will be entitled to determine, calculate, and pursue unpaid water pollution control fees from enterprises that have tried to avoid paying or have failed to pay the fees due.

Water

Cleanup of *TS Taipei* Oil Spill

On 10 March 2016, the Taiwan-registered container ship, the *TS Taipei* ran aground just 0.3 nautical miles from the coast of Shimen, New Taipei City after its engines lost power. The ship was carrying 407 tonnes of fuel and 40 tonnes of diesel. The EPA set in motion its response mechanism with three major goals: personnel safety first; making every effort to remove the oil; and preventing secondary pollution from occurring. The EPA also requested the ship owner to remove all the oily wastes collected each day and have them transported by licensed waste clearance organizations. As of 7 April, a total of 1,950 kg of waste, 2,380 liters of oily water and 38 containers had been removed. The three containers left will be lifted off when the tide is low. The remaining oil is being removed by the ship owner under the supervision of the emergency response center. The emergency response center will continue with dispatching fishing boats to carry out oil removal in the open sea and with supervising the ship owner to deploy oil booms and oil absorbent booms. Premier Chang San-Cheng also asked the Fisheries Agency of the Council of Agriculture to urge the ship owner to clarify how damages will be determined with its insurance company as soon as possible to ensure that the losses of fishermen will be properly compensated.

The Taiwan registered container ship *TS Taipei* ran aground just 0.3 nautical miles from the coast of Shimen, New Taipei City at 9:30 am on 10 March 2016 after its engines lost power. The ship's crew

reported that they had laid anchor as the hull was punctured and the engine room was taking in water. The ship weighed 15,487 tonnes and was carrying 407 tonnes of fuel and 40 tonnes of diesel. Since the fuel and goods on the ship posed an immediate pollution threat to the local marine environment, the EPA set in motion its response mechanism in accordance with the Major Marine Oil Spill Emergency Response Plan and asked the New Taipei City Environmental Protection Bureau to immediately deploy emergency response resources to the affected area.

The EPA inputted data on weather and sea conditions into its oil dispersal simulation modeling system to predict the impact of the oil slick on the surrounding area for the following 24 hours. The EPA also requested that one of Taiwan's satellites, FORMOSAT-2, begin monitoring the seas to provide the response teams with real-time data on changes in sea conditions in the vicinity of the incident.

On 10 March, the EPA convened an emergency response meeting at the Shimen District Office, New Taipei City, attended by representatives from the Maritime and Port Bureau of the Ministry of Transportation and Communications, the Maritime and Port Bureau's North Maritime Affairs Center, the Coast Guard Administration, the Maritime Patrol Directorate General, the Council of Agriculture, the Ministry of Health and Welfare, Jinshan Nuclear Power Plant, the Ministry of Defense, the New Taipei City Bureau of Environmental Protection, Taiwan International Ports Corp. (Port of Keelung), and T.S. Lines Co. During the meeting the EPA asked each organization present to fulfill their tasks as laid out in the Major Marine Oil Spill Emergency Response Plan and endeavor to preserve all relevant evidence. The EPA further asked the Maritime and Port Bureau to take charge of removing remaining oil and oil products from the ship as authorized by Article 53 of the *Commercial Port Law* (商港法).

On 7 April the central emergency response center convened another oil pollution response meeting that was chaired by EPA Deputy Minister Fu Shu-Chiang at the Shimen District Office. The EPA is continuing to monitor the marine pollution using unmanned aerial vehicles (UAVs) and land-based radar vehicles. The collected data showed that there was no oil spill on the sea surface of the rear starboard side of the ship, around a nearby fishing harbor and the water inlet

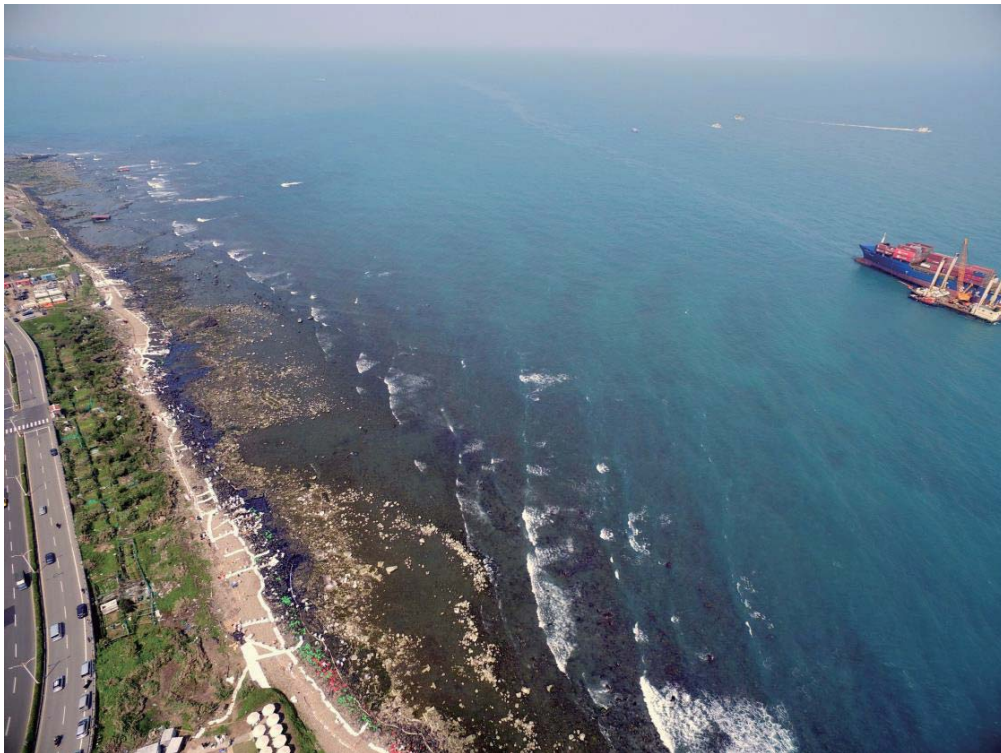
for Jinshan Nuclear Power Plant, confirming that the booms initially deployed seemed to be doing their job.

As for the remaining oil in No. 3 cargo hold on the *TS Taipei*, the emergency response center will continue to supervise the ship owners to remove the oil as quickly as possible, and will also supervise the addition of more oil booms and oil absorbent booms at the side of the ship. Fishing boats have also been dispatched to cleaning up the oil spilled into the sea to prevent it from spreading out. By 7 April, 258 person-days had been spent on cleaning up the shore, with 1,950 kg of wastes and 2,380 kg of oily water removed. The EPA requested the ship owner to employ a licensed waste clearance organization to remove all of the wastes and oily water collected each day.

According to the Maritime and Port Bureau, as of 7 April, 38 containers have been lifted off the rear deck of the *TS Taipei* with three remaining containers to be removed at low tide. Premier Chang San-Cheng has been very concerned about the progress being made in removing the remaining oil and containers from the wreck of the *TS Taipei*. On 6 April 2016, he made his fourth inspection visit to the emergency response center at the scene and listened to reports from the ministries involved. Officials from the Maritime and Port Bureau said that they would continue to push the ship company to submit full-fledged plans detailing how they plan to remove the remaining oil and haul the hull to a suitable location afterwards, knowing that these tasks must be completed before the typhoon season begins.

Premier Chang also asked the Fisheries Agency of the Council of Agriculture to urge the ship owner to work with its insurance company as soon as possible to clarify how damages will be determined and ensure that losses of fishermen loss will be properly compensated.

The EPA made it clear that although the personnel involved in the clean-up are making every effort to remove the oil and prevent secondary pollution from occurring, they still have to put safety first. All government agencies involved will continue to work hard on their respective emergency response tasks and ensure that Taiwan's marine environment is protected as well as possible.



▶ Oil spill of the container ship TS Taipei is monitored by an unmanned aerial vehicle.



▶ Coastal oil spill from the container ship TS Taipei is cleaned.

Amendments to Regulations for Remediation Fees Collection Preannounced

The EPA recently reviewed the status of remediation of contaminated sites, and examined the relationship between items listed for collection of remediation fees and their pollution potentials. The EPA concluded that current fees do not adequately reflect remediation costs. To correct this, the EPA has preannounced amendments to 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).

After considering the government's soil and groundwater pollution management targets, and referring to Article 28 Paragraph 2 of the *Soil and Groundwater Pollution Remediation Act* and Article 3 Paragraph 3 of 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 EPA drafted the amendments. The amendments will mainly affect the categories of substances subject to remediation fee collection, fee rates, industry categories, and some of the wording of the regulations. The main points of the amendments are as follows:

1. The EPA amended the remediation fee rates after thoroughly examining: the pollutants discovered at the contaminated sites; listed soil and groundwater pollution control and monitoring items; and, chemicals with pollution potentials. The revised fee rates will not only better reflect the substances' pollution potentials, they will also increase the ratio of fees collected from wastes to those collected from raw materials, products and byproducts, thus making the fees more reflective of the sources of contamination.
2. As a result of the changes to the fee structure, the fee base has expanded with the addition of 22 substances that will be subject to remediation fees.

New additions include chlorinated hydrocarbons, such as pentachlorophenol; heavy metals and their compounds, such as molybdenum and indium; and 13 pesticides, such as chlordane.

3. The remediation fees for waste are currently collected according to industry categories which gives rise to a number of problems. The amended fees will be collected on the basis of volumes of 66 categories of industrial waste, each having a code according to a system that the EPA has created to reflect the amount recorded on the manifest, to make the system fair for the enterprises concerned.
4. Fee rates have been adjusted to correspond to the changes in industry categories, collection ratios, and total amount of fees collected.
5. The method of interest calculation on late payments has been clarified. The EPA will also enforce the online-only fee-payment report to simplify procedures, make it easier for the public to pay fees and make fee collection more effective.
6. 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.

Amendments to Regulations for Wastewater Related Online Applications and Submissions Preannounced

In response to the latest amendments to the *Water Pollution Control Act* (水污染防治法) that require all future water pollution control related applications to be submitted online, the EPA has preannounced amendments to the *Regulations Governing Online Water Pollution Control Measures Submitting; Permits Applications, Modifications or Extensions; and Enterprises Required to Conduct Effluent Testing and Reporting and Related Procedures*.

On 31 March 2016, the EPA preannounced amendments to the *Regulations Governing Online Water Pollution Control Measures Submitting; Permits Applications, Modifications or Extensions; and Enterprises Required to Conduct Effluent Testing and Reporting and Related Procedures*. The amendments were made in response to amendments to the *Water Pollution Control Act* requiring information disclosure and online-only submission of applications and reports starting from 1 January 2017. The amendments will also strengthen the management and auditing of pre-submissions to eliminate data falsification and improve the quality of reported data.

The main points of the amendments are as follows:

1. All wastewater related reports or applications can only be submitted online, starting from 1 January 2017.
2. The enterprises subjected to the regulations shall pre-submit 24 hours in advance to the central competent authority's water pollution source information management system, before conducting water sampling and volume measurement. The name of the environmental inspection and testing institution that is commissioned to conduct the test, the items to be tested or measured, the name of the sampling and measuring technician, the date, and predicted sampling and measuring time for two-hour intervals should all be submitted online. The pre-submitted information should not be altered for the following 24

hours. Once sampling has been completed, the actual sampling/measuring information should be submitted within 24 hours.

3. Enterprises that do not conduct water sampling for quality tests or measure water volume in accordance with the pre-submission related provisions must redo the pre-submission, as well as conduct the water sampling and volume measurement procedures.
4. Enterprises that change pre-submitted information more than twice a year, or that are suspected by the competent authority to be not collecting samples for water quality tests, will be subject to priority inspections.

5. The online application or reporting form must be completed and submitted online. The digital or scanned files of all other required documentation or data must be submitted online as well.

The EPA is keen to take advantage of internet technology and, in the interest of information disclosure, will soon begin to publish online information on permit applications and periodic wastewater testing from enterprises and operators of sewage systems. The EPA hopes that provisions making some enterprises – such as ones that change pre-submitted information frequently, or ones suspected of not collecting water samples for water quality tests – subject to priority inspections will help prevent the falsification of water quality test data.

Environmental Inspection

Workshop Held to Share Water Recycling Experiences for EIA Decision Enforcement

On 2 March 2016 the EPA held the Workshop on Water Recycling for EIA Decision Enforcement. The workshop was attended by more than 100 participants representing industry, government and academia. From their respective positions, the participants shared the outcome of their efforts in making good use of Taiwan's precious water resources with a view toward improving water resources management.

In his opening speech, EPA Deputy Minister Tzi-Chin Chang pointed out that Taiwan faced three major challenges regarding water resource management: scarcity of water resources in the natural environment, lack of a legal basis for water recycling, and having no clear methodology for auditing water recycling rates. To break through the predicaments, the EPA is keen on finding the appropriate law enforcement

measures and hopes that through environmental impact assessments geared toward the characteristics of each development project, a minimum water recycling rate can be reasonably required. Moreover, for the purpose of integrating the goals of saving water and reducing wastewater at source into EIAs, the EPA established a program in 2015 to audit the rate of wastewater production and recycling in the industrial

parks. The EPA expects such regulatory reforms will improve water resources management.

This workshop had four major topics of discussion:

- 1) New measures for enforcement of EIA decisions regarding water recycling at development projects
- 2) Industrial park water recycling measures and management
- 3) Industrial water recycling technology and application
- 4) Academic views on water recycling technology and prospects

The EPA also invited professionals from relevant fields to attend the workshop, including: experts and scholars with backgrounds in water recycling; representatives from the Ministry of Science and Technology; representatives from the Industrial Development Bureau of the Ministry of Economic Affairs (MOEA), who manage industrial parks or are in charge of various development projects in industrial areas; and, representatives from the Water Resources Agency of the MOEA, who are responsible for the allocation of national water resources. Other attendees of the workshop included personnel from local environmental protection bureaus and representatives of related industries.



▶ A workshop on water recycling is held for environmental impact assessment decision enforcement.

Waste

Mandatory GPS Now on 8,888 Waste Clearance Vehicles

To monitor and effectively control the flow of industrial waste, the EPA has been requiring operators of vehicles that transport hazardous or large amounts of waste to install GPS devices linked to the EPA's real-time tracking system. To date, vehicles carrying 267 listed types of industrial waste are required to have GPS installed. The number of vehicles with such devices has now exceeded the mark of 8,888.

In 2001, the EPA announced that vehicles used for transport of listed types of industrial waste should have GPS tracking devices installed in accordance with Article 31 Paragraph 1 Item 3 of the *Waste Disposal Act* (廢棄物清理法) so that industrial

waste clearance could be monitored and controlled more effectively. To date, the Act has been amended seven times, and the EPA now requires all hazardous waste produced by listed enterprises to be transported in vehicles with GPS tracking devices.

The EPA's tracking system has also been made available to enterprises and other environmental agencies to monitor the movements of listed clearance vehicles and keep track of industrial waste with the help of real-time and historical tracking data. The GPS system automatically flags unusual vehicle movements everyday and sends the data to local government environmental protection bureaus so that they can conduct checks and offer advice where necessary. The system allows local government environmental protection bureaus to set up their own "red alert zones" where illegal dumping could take place and automatically monitor any of the GPS vehicles that enter these zones. Knowing about the system's "red alert zones" should dissuade unscrupulous operators from attempting to dump waste there.

Currently there are 8,888 vehicles equipped with GPS that transport 267 types of industrial waste. In terms of distribution of GPS waste clearance vehicles, Taiwan's central region has the most with 29%, the southern region has 27% and the northern region has 20%. Statistics show that nationwide in 2015, approximately 14 million tonnes of industrial waste were transported by these vehicles. Members of the public who wish to learn more about the GPS tracking system can visit the EPA's dedicated web page (http://gps.epa.gov.tw/GPSZone/index_Normal.asp), enquire at their local government environmental protection bureau, or call the EPA's Industrial Waste Control Center hotline (0800-059-777).



► The number of waste disposal vehicles with GPS devices has reached 8,888.

EIA

Recusal Principle Added into EIA Review Committee Organic Regulations

Due to organizational transformation and amendments to the *Environmental Impact Assessment Enforcement Rules* (環境影響評估法施行細則), the *Organic Regulations of the Environmental Impact Assessment Review Committee* (環境影響評估審查委員會組織規程) was also amended, and the principle of recusal was added.

Pursuant to Article 3 Paragraph 3 of the *Environmental Impact Assessment Act* (環境影響評估法), on 30 June 1995 the EPA promulgated the *Organic Regulations of the Environmental*

Impact Assessment Review Committee. These regulations have been revised five times since then, in accordance with actual needs.

On 3 July 2015 the EPA amended the Environmental Impact Assessment Enforcement Rules by adding Article 5-1 which stipulates that the *Environmental Impact Assessment Review Committee* should adopt the principle of recusal not only according to the provisions of the *Environmental Impact Assessment*

Act, but also according to those of the *Administrative Procedural Act* (行政程序法). In addition, when counting the number of committee members attending the EIA review meetings, those considered recused will not be counted as present.

News Briefs

Amendments to Dioxin Emission Standards from Stationary Sources Preannounced

On 11 March 2016, the EPA announced the draft of amendments to the *Dioxin Emission Standards from Stationary Sources*. (固定污染源戴奧辛排放標準). The existing standards promulgated on 2 January 2006 state that the standard percentage value of oxygen that is contained in exhaust for dioxins is calculated based on undiluted dry exhaust volume. However, the provisions of the *Stationary Pollution Source Air Pollutant Emissions Standards* (固定污染源空氣污染物排放標準) stipulate that, except for specified industries, the standard percentage value of oxygen that is contained in exhaust for particulate pollutants, sulfur oxides and nitrogen oxides is set at 6%. To make the calculations of air pollutant emissions more consistent, the EPA has drafted the amendments to set the standard percentage value of oxygen that is contained in exhaust for dioxins as 6%.

Free App Available for Finding Shops Selling Green Mark Products

Starting in 1992, the EPA has promoted Green Mark products to help citizens choose healthy and environmentally friendly products. Currently over 4,900 products have been awarded the Green Mark by the EPA. To facilitate the purchase of these products, the EPA has rolled out a free Green Shop app that smartphone users can use to locate green shops. The public can also log onto the Greenliving Information Platform (<http://greenliving.epa.gov.tw/>) to find green shops and see what products with the Green Mark or Carbon Label they are selling. Yet another option is to shop at the Green Products Online Procurement Network (<http://www.buygreentw.net>). To date the network has 464 products with the Green Mark available for online purchase.

To encourage green consumption, since 2008 the EPA has worked with the local environmental protection bureaus to assist industries in converting over 10,000 of their retail stores into green shops, which sell products with the Green Mark or Carbon Label. Consumers are thus provided with a convenient channel to purchase environmentally friendly products. EPA statistics show the revenue of environmentally friendly products from sales at green shops reached NT\$37.1 billion in 2015.



▶ QR codes for the Green Shop app



▶ A free app for smartphone users to search for Green Shops is now available.

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