



Waste Management

Republic of Clean: Administrator Hau's Earth Day Vision

Administrator Hau announced on Earth Day that the first stage of the EPA's "Plastic Shopping Bag and Plastic Disposable Dishes Use Restriction Policy" will be implemented on July 1 of this year. Hau also took advantage of the occasion to express his vision of realizing an environmental protection revolution and transforming the ROC into the Republic of Clean.

To affirm his commitment to the environment, sustainable development and the Earth, Administrator Hau Lung-bin took advantage of Earth Day to formally announce that the EPA will begin implementing the first stage of restrictions on the use of plastic shopping bags and plastic disposable dishes on July 1, and also appealed to the public to support this policy and

work together for a cleaner environment.

"Environmental protection requires full citizen participation," said Hau, "and that means taking action in real life, not just agreeing with environmental protection in principle. It is essential that people change

habits that are harmful to the environment and cultivate environmentally-friendly habits. Everyone must be willing to sacrifice a tiny bit of convenience and instead take the little actions that are needed to turn Taiwan's environment around."

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Administrator Hau with the leader of the EPA's Environmental Education Volunteer Corps on April 16. The corps' first mission is the promotion of the EPA's restrictions on plastic shopping bags and disposable dishes (see Activity on page 11).

Waste reduction is the first priority in cleaning up the environment, and the EPA plans to implement a series of waste reduction measures, of which restrictions on the use of plastic bags and plastic disposable dishes are the first step. "Restricting the use of plastic bags and disposable dishes is absolutely not just another government-implemented environmental protection policy, but rather the start of a revolution that will touch the life of every citizen." Hau declared that the policy's success will show "whether the people share the consciousness and determination to save Taiwan from the blight of pollution." Hau called on citizens to create an "environmental protection miracle" of the same order as Taiwan's "economic miracle" and "democratic miracle" of the last few decades, and appealed to the public to work together with the government in creating the Republic of Clean.

The first-stage restriction measures target various levels of government, state-run enterprises, military units (including military commissaries), public and private schools and public hospitals and clinics, and any commissaries, cooperatives, restaurants, or other public or private sales enterprises on the premises of the above organizations that exist for the purpose of serving employees, students and faculty, or patients, etc. (see EPM Vol. V, Issue 4). Those who violate the announced regulations will, in accordance with Article 51 of the *Waste Disposal Act* (廢棄物清理法), be subject to fines of between NT\$60,000 and NT\$300,000. The allowed thickness of plastic shopping bags—originally 0.1mm under the draft plan—has been revised to 0.06mm, which will lessen the impact on the plastic bag manufacturing industry.

For more information, please call 02-2370-5888 ext. 3610.

Environmental Analysis

Environmental Analysis—Building a Foundation for Environmental Protection

After many years of implementation, Taiwan's environmental analysis system has gradually reached a state of maturity, and long-term improvements have been made in terms of manpower, equipment, systems, and experience. The number of environmental analysis organizations has risen steadily, and their combined annual revenue has surpassed NT\$1.1 billion. Only sound management can ensure the correctness and reliability of environmental data, which provides the solid foundation on which environmental protection work is built.

"Environmental analysis is the foundation of environmental protection work. The successful drafting and implementation of policies, laws, and regulations depends upon the availability of accurate, reliable, and credible environmental survey and testing results. That is why the government established the EPA National Institute of Environmental Analysis in 1990." The new director general of the National Institute of Environmental Analysis (NIEA), Ms Wang Pih (王碧), described the role of the NIEA in these words.

Upgrading the Analysis Capabilities of Environmental Protection Agencies

After the NIEA was founded, besides developing its own analysis capabilities, the institute also set aside an annual budget to help the environmental analysis agencies of city and county governments. Apart from the inspection units attached to the three divisions under the EPA Chief Inspection Team and NIEA, all county and city environmental protection bureaus have established dedicated environmental inspection units responsible for pollution sampling and testing work.

The NIEA is focusing much of its effort on improving the analysis capabilities of these environmental protection agencies. As for its own analysis capabilities, the fact that the institute received Australian National Association of Testing Authorities (NATA) certification in 1995 shows that it has already achieved international standards.

Furthermore, since late 1999, the institute has been helping the larger analysis laboratories of city and county environmental protection bureaus to obtain Chinese National Laboratory Accreditation (CNLA). Analysis laboratories of environmental protection bureaus in Taipei City, Taipei County, Kaohsiung City, Kaohsiung County, Taichung City, Taichung County, Changhua County, Tainan City, and Tainan County, and those of the three inspection divisions under the Chief Inspection Team have received this certification thus far.

The budget of the NIEA clearly shows that Taiwan's environmental analysis system has achieved impressive momentum. Since the establishment of the institute in 1990, environmental analysis spending has gradually risen in pace with growing amounts of personnel, equipment, and services. This growth leveled off around 1994.

Due to the construction of an environmental analysis building in 1996, the environmental analysis budget experienced another growth spurt. With the completion of the environmental analysis building in 1998, the institute's budget again stabilized around an annual level of approximately NT\$210 million.

Of the institute's annual budget of roughly NT\$210 million, approximately NT\$130 million goes for personnel costs, equipment and facility installation and maintenance, and other administrative expenses. Approximately NT\$70 million is used for the implementation of environmental analysis. The remaining NT\$10 million is used for technology R&D and related expenses.

Facilitating Private Participation in the Environmental Analysis Market

Although environmental authorities have aggressively developed their analysis capabilities, Director General Wang Pih noted, the government's analysis capabilities still fall short of the needs of environmental protection work. Realizing the need to mobilize private resources for the sake of environmental protection work, the EPA began the privatization of environmental analysis tasks as early as 1987. Afterwards, the enactment of the *Management Regulations for Environmental Analysis and Testing Organizations* (環境檢驗測定機構管理辦法) in 1990

laid the groundwork for the management of environmental analysis organizations in Taiwan. Today, after many years of promotion, environmental analysis has achieved a stable scale of operations in Taiwan, and the oversight of the environmental analysis industry has become a major task for the NIEA.

The number of environmental analysis organizations has kept pace with the country's rising volume of environmental protection work in recent years. After the EPA allowed participation of private firms in analysis work, market demand spurred rapid growth in this industry, and the number of firms surged from two in 1988 to as many as 61 in 1995. But since environmental analysis needs have remained steady since 1995, the growth in the number of analysis organizations has also slowed. At present 93 licensed environmental analysis organizations operate 103 laboratories, and at least 1,100 persons work for these organizations. The laboratories test roughly 250,000 samples each year, which accounts for roughly 85% of domestic environmental analysis needs. The total annual revenue of this industry is on the order of NT\$1.1 billion.

Since environmental analysis demand has stabilized, Director General Wang Pih stressed that future oversight work will focus on the improvement of environmental analysis quality. Apart from continuing to review relevant laws and quality control standards, the

NIEA will work to ensure the quality and credibility of environmental data by strengthening blind testing and audits of sampling locations and analysis laboratories. And to maintain high standards, the institute will provide analysis seminars, training classes and guidance services to analysis industry personnel.

To bring Taiwan's oversight of the environmental analysis industry up to international standards, the institute plans to promote the certification of laboratories under the International Organization for Standardization's "Ordinary Calibration and Testing Laboratory Requirements" (ISO-10725) and will also strive to integrate with the CNLA certification system.

In addition, the registered business items of analysis organizations are mostly limited to conventional analysis tasks. To meet domestic analysis needs and raise industry standards, the NIEA is currently encouraging organizations to offer more technically-challenging test items, which could enable them to expand their business scope and scale of operations.

Establishment of Standard Analysis Methods

The improvement of the analysis capabilities of environmental protection agencies and private analysis firms and the establishment of standard analysis methods are both of the utmost importance for strengthening the country's environmental analysis system. Since

Number of Licensed Environmental Analysis Organizations

Year	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	Total
Organizations licensed	2	11	11	5	7	11	11	13	3	8	3	17	4	3	3	112
Lapsed or revoked licenses	0	0	0	4	1	4	0	1	1	3	1	2	1	1	0	19
Cumulative number of organizations	2	13	24	25	31	38	49	61	63	68	70	85	88	90	93	93



Future environmental analysis work will emphasize the improvement of sampling quality.

many environmental protection laws were enacted at an early date in Taiwan, the NIEA has worked steadily to formulate the standard analysis methods needed to accompany laws and regulations.

Over the years, the EPA has announced environmental analysis methods in a number of categories, including 108 in the “air” category, 176 in the “water quality” category, 161 in the “waste” category, 17 in the “toxic chemical” category, 17 in the “soil” category, 37 in the “environmental agents” category and 53 in the “environmental biology” category, and 573 methods have been announced in all.

With respect to the formulation of standard analysis methods, the Director General explained that because a great number of standard methods still needed to be drafted in the past, and because the EPA had yet to firmly establish a system and experience for the drafting of these standards, there were sometimes instances in which analysis methods did not coordinate with approved regulatory standards.

But now that the NIEA has established a system for drafting standard analysis methods, and has accumulated considerable experience, it is now able to draft analysis methods with greater speed, and can keep pace with the enactment of environmental protection legislation. Taking the *Soil and Groundwater Pollution Remediation Act* (土壤及地下水污染整治法) as an example, the act took effect on February 2, 2000 and standard analysis methods are now largely in place, ensuring that all soil and groundwater pollution analysis can proceed smoothly.

Outline of Future Analysis Policies

Discussing the endeavors of the NIEA, Director General Wang Pih emphasized that her administrative tasks are ongoing, and major work items have been added gradually to the institute’s operations over the last few years. But to meet overall environmental protection needs, the institute will particularly stress the following tasks:

1. Strengthening quality control and quality assurance of EPA-

contracted projects: The NIEA is qualified to assist the EPA in performing contracted project QA, QC and audit work. The institute plans to improve project data quality and provide more credible environmental information as a decision-making reference. In addition, the institute will also formulate environmental database QA criteria and deploy a data quality validation system to safeguard the quality of the data in environmental databases.

2. Strengthening the formulation of standard environmental analysis methods: The institute will accelerate the formulation of standard analysis methods to meet the needs of new environmental protection laws and regulations. Emphasis will be placed on the development of automated, high-efficiency, low-pollution, environmentally-friendly techniques.
3. Achieving more timely emergency response capabilities: In accordance with the EPA’s policy, the institute will cooperate with environmental protection agencies at all levels to perform large-scale mission-oriented investigative work in event of emergencies. The institute will be prepared to provide accurate real-time analysis data for use as a decision-making reference in the aftermath of major pollution incidents.
4. Putting management of environmental analysis organizations on a sound footing: The institute will adopt active and effective management measures, and will strive to ensure high-quality, credible environmental data by emphasizing the representativeness of samples, sampling professionalism and integrity of the sample analysis chain.

Water Quality

Revised Water Pollution Control Act Paves Way for Water Pollution Fees

The Legislative Yuan's passage of the revised *Water Pollution Control Act* provides a legal basis for the levying of water pollution fees, which will be used for the cleanup of river and waterway pollution. In addition, the new law will simplify the process of issuing discharge permits by industrial parks and other enterprises, and also incorporates mechanisms for citizens' litigation. While the EPA expects to begin levying water pollution control fees on businesses next year, households will not be subject to the fees for at least another three years.

To provide an economic incentive for the control of water pollution, the EPA originally planned to begin charging water pollution control fees in 1998, but uncertainty over legal authority caused the fee plan to be delayed. To properly implement a water pollution fee system, the EPA drafted a revised *Water Pollution Control Act* (水污染防治法), which was passed into law by the Legislative Yuan on April 25.

According to the new act, the EPA may levy water pollution control fees in accordance with the quantity and quality of discharged water from businesses, wastewater sewer systems and households that discharge wastewater (sewage) into surface bodies of water. A special fund to be

established using the levied fees will be used for river and waterway pollution remediation, water quality improvement in water quality protection areas supplying drinking water, and public sewer construction. Entities that fail to pay required water pollution fees before the specified deadline shall be charged interest, and those whose payments are overdue by more than 90 days shall be subject to compulsory execution. Businesses and sewer systems may be fined between NT\$30,000 and NT\$300,000, while households may be fined between NT\$1,500 and NT\$30,000.

To ensure the smooth implementation of the water pollution fee system, the revised act calls for the fees to be instituted in stages. The EPA will be responsible for determining the time of each stage, the targeted entities, the levying format, and calculation methods. Moreover, the government must review its success in preventing water pollution on an annual basis and report results to the Legislative Yuan.

Apart from regulations concerning water pollution fees, the new act implements the resolutions of the Economic Development Advisory Conference by specifying that dedicated management organizations in charge of future science-based industrial parks, export processing zones, and industrial park land controlled by the central competent authorities in charge of the industries in question may be authorized to issue water pollution permits. The integration of administrative procedures under the revised act is expected to shorten the time needed to open a new plant.

Furthermore, the revised act adds a "citizen litigation article" specifying that if government organizations fail to take prompt punitive action when a plant violates water

pollution regulations, injured members of the public or public interest groups may request the matter to be handled in accordance with law within 60 days; if such a request is not acted upon, the appellants may sue in a court of law. The inclusion of this article is intended to spur the authorities to enforce the law vigorously against polluters.

As for the punitive provisions of the revised act, responsible entities that fail to take emergency action in the event of a water pollution incident, or that fail to obey environmental protection authorities' orders, with the result that lives are lost, severe injuries occur or health dangers cause illness, the responsible persons may be punished by up to life imprisonment or fined up to NT\$5 million. Fines for those who falsely report wastewater treatment facility operations and water quality/quantity have been raised from the less than NT\$30,000 of the past to between NT\$200,000 and NT\$1 million (alone or in conjunction with other punishment). The EPA will strictly audit the quality assurance and quality control of environmental analysis companies in the future, and will prosecute those found to be in violation.

Because the Legislative Yuan also passed an additional resolution calling for water pollution control fees to be levied only on businesses during the initial period when reviewing the revised *Water Pollution Control Act*, households will be exempt from such fees for at least another three years, and fees will be levied on sewer systems only after they achieve a certain level of ubiquity. In agreement with this approach, Administrator Hau notes that current plans call for the levying of water pollution fees on specified enterprises next year, and severe polluters will be targeted first.

Soil and Groundwater

EPA-COA Reach Consensus on Agricultural Land Pollution Handling Principles

The EPA and COA conducted a special responsibility coordination meeting in April in order to address issues related to the rash of recent discoveries of polluted agricultural land. The two bodies achieved consensus on a number of duty distribution issues, including compensation for the destruction of contaminated agricultural products and for leaving land idle and the analysis of rice.

The public has gradually become more aware of the heavy metal pollution of agricultural land since the first discovery of cadmium contaminated rice in 1983. The *Soil and Groundwater Pollution Remediation Act (SGPRA)* puts the EPA in charge of the remediation and oversight of all pollution sites. However, as this particular pollution problem involves agricultural issues, Council of Agriculture (COA) chairman Fan Chen-tung (范振宗) led top-level COA officials in conducting a special inter-ministerial coordination meeting with the EPA in April. This face-to-face meeting addressed such post-pollution issues as compensation for the destruction of contaminated agricultural products and for leaving land idle and the continued analysis of rice. With both bodies expressing their sincerity to deal with this problem, this meeting led to consensus on the above issues and allowed for an exchange of opinions on other issues such as the handling of live-

stock waste and the use of kitchen waste as organic fertilizer and livestock feed.

At this meeting, the EPA agreed to have the Soil and Groundwater Pollution Remediation Fund provide compensation to affected farmers for the destruction of agricultural and aquacultural products that are contaminated as a result of soil pollution. The COA also pledged to formulate a program for raising the value of compensation to farmers for leaving polluted land idle. The Soil and Groundwater Pollution Remediation Fund will provide this compensation for two years and remediation work on idle land is to be completed as quickly as possible within a maximum period of two years. The COA will cover the costs of analyzing rice. The EPA, after completing a survey of 319 hectares of possibly polluted agricultural land, will immediately assemble related agencies in order to jointly pursue follow-up response measures. The EPA and COA agreed to jointly deliver press releases concerning soil pollution of agricultural land.

The meeting also addressed the prevention of continued pollution of irrigation canals by industrial effluence and the clean up of bottom sludge in polluted canals. The COA promised to require local irrigation associations to lend assistance by reporting on the illegal discharge of industrial effluence. The COA will also help revise regulations prohibiting the release of industrial effluence that does not meet standards for irrigation water into irrigation canals. Environmental protection agencies will step up their crackdowns on polluters and illegal enterprises. These agencies will demand that illegal factories adhere to set timetables for relocating to industrial parks and will require that these factories immediately halt the discharge of effluence and adopt appropriate effluence treatment methods.

The EPA and COA will jointly coordinate with the Ministry of Economic Affairs in order to provide assistance and incentives for relocating enterprises to industrial parks. Local irrigation associations will be responsible for the dredging of bottom sludge from polluted irrigation canals. The EPA will work with local environmental protection agencies on the final treatment and disposal of this polluted sludge. Following the completion of remediation work, environmental agencies will investigate polluters and seek compensation in accordance with the law.

For more information, please call 02-2311-7722 ext. 2277.

Activities

Environmental Shopping Bag Design Winner Announced

Administrator Hau personally presented the NT\$200,000 top prize to the winner of the EPA's environmental shopping bag design contest on April 21. The EPA will produce 200,000 environmental shopping bags based on this design and give these bags to the employees of government agencies, schools, state-run enterprises and military installations. These organizations have been selected as the targets for the first stage of restrictions on plastic shopping bags and disposable dishes, set to commence on July 1.

Post-WTO Seminar for the Environmental Services Industry

The EPA, Council of Economic Planning and Development, and Board of Foreign Trade jointly conducted a seminar on April 11 in order to help the environmental services industry better understand the implications of Taiwan's WTO accession. At this seminar, the EPA presented a special report on the latest developments in the environmental services sector and engaged in wide-ranging discussions with domestic enterprises of issues related to the effects of WTO membership on the environmental services industry.

Air Quality

Industries Targeted for CEMS Installation Expanded

The EPA is currently drafting regulations regarding the second set of stationary pollution sources that are required to be equipped with continuous emissions monitoring systems. This will lead to the installation of CEMS of 91 exhaust pipes and smokestacks at 45 enterprises over the next two years.

In order to strengthen the monitoring of major stationary pollution sources, and coordinate with the policy of collecting air pollution fees based on actual emissions volumes, the EPA in line with Article 21 of the *Air Pollution Control Act* (空氣污染防治法) is currently drafting regulations for the second set of stationary pollution sources that are targeted for the installation of continuous emis-

sions monitoring systems (CEMS). In addition to expanding the type of operations required to install CEMS to include boilers, steam turbines and electric generators, these regulations also require CEMS to be installed on the reheating furnaces and cracking furnaces of the petrochemical industry, the coke furnaces and sintering furnaces of the steel industry, the sulfuric and nitric acid manufacturing operations of the chemical raw materials industry, and general and industrial waste incinerators. All facilities targeted under these expanded regulations will be required to be fitted with CEMS and to set up Internet connections between these systems and competent authorities. According to preliminary estimates, 91 exhaust pipes and smokestacks of approximately 45 private and state-run enterprises will finally be equipped with CEMS.

Enterprises must complete the installation of CEMS on these targeted facilities within two years of the announcement of these regulations. They are also required to set up Internet connections between these CEMS and local environmental protection authorities.

However, enterprises that have already installed CEMS before the announcement of these regulations will be required to set up these Internet connections within one year.

Regular testing may be used in place of CEMS when special circumstances preclude the installation of CEMS and enterprises have received the approval of competent authorities. CEMS are unable to accurately measure the degree of opacity (OPC.) of emissions from facilities that are equipped with wet chemical scrubbers. Therefore, enterprises using these scrubbers may adopt other effective methods of monitoring emissions or may utilize the best available control technology for particulate pollution in order to treat waste gases. Enterprises adopting these non-CEMS alternatives will be required to regularly provide competent authorities with the operational records of these pollution control systems.

For more information, please call 02-2311-7722 ext. 2682.

Proposed Second Set of Stationary Pollution Sources Targeted for CEMS

Industry	Facilities or Manufacturing Processes	Pollution Source	Installation Criteria	Monitoring Targets
All industries	Public boilers, transportation-use steam turbines, electric generators	Those that use solid or liquid fuel	1. 61.5-100 million kilocalorie (Kcal.)/hr	OPC., SO ₂ , NO _x , O ₂ , Q
		Those that use gaseous fuel	2. 80-130 tons/hr	NO _x , O ₂ , Q
Petroleum refineries and petrochemical manufacturers	Petrochemical production	Reheating furnaces and cracking furnaces	61.5 million kilocalories/hr or over	OPC., SO ₂ , NO _x , O ₂ , Q
Steel smelters	Preliminary smelting	Coke furnaces and sintering furnaces	All of these facilities	OPC., SO ₂ , NO _x , O ₂ , Q
Basic chemical industry	Sulfuric acid and nitric acid manufacturing		Sulfuric acid: 60,000 tons/yr or over	OPC., SO ₂ , O ₂ , Q
			Nitric acid: 35,000 tons/yr or over	OPC., NO _x , O ₂ , Q
All industries	Waste incineration	General and industrial waste	General: 10 tons/hr or over Industrial: 4 tons/hr or over	OPC., SO ₂ , NO _x , O ₂ , Q

Soil and Groundwater

Preliminary Soil and Groundwater Pollution Survey Results

With regulations related to the *Soil and Groundwater Pollution Remediation Act* nearing completion, the EPA has initiated a comprehensive survey of suspected pollution sites around Taiwan. Preliminary results of this survey reveal that many sites are indeed the victims of pollution and that they must be listed as pollution control sites.

The Soil and Groundwater Pollution Remediation Fund, established in November 2001, is forecast to collect NT\$750 million in remediation fees this year. Based on this budget, the EPA has initiated a comprehensive survey of filling stations, major petroleum storage facilities, and 319 hectares of agricultural land suspected of suffering from soil and groundwater pollution. Preliminary survey results have already led to the decision to list many of these sites as pollution control sites.

As part of this survey, the EPA conducted on-site inspections of groundwater pollution control and monitoring equipment at 191 filling stations that have been in operation for ten years or more. This survey identified 19 filling stations as high risk sites. Further inspections this year have verified that four of these filling stations, located in Changhua County, Taoyuan County, Kaohsiung

of benzene and vinyl chloride in the groundwater at five of these sites exceed pollution control standards. These sites are Chinese Petroleum Corp.'s (CPC) Kaohsiung refinery, CPC's Linyuan petrochemical plant, Grand Petroleum Corp.'s Kaohsiung plant, Taiwan Styrene Monomer Corp.'s Kaohsiung plant, and Formosa Plastics Corp.'s Linyuan plant.

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County, and Tainan County respectively, have been polluted by petroleum products. Also, following the filing of formal complaints by citizens, inspections were conducted at two other filling stations in Taoyuan County and Tainan County. These inspections reveal that these sites have been polluted by benzene and other pollutants.

Pollution surveys of six major petroleum storage facilities in Kaohsiung County and Kaohsiung City show that the concentrations

The EPA has also wrapped up all sampling work for the survey of 319 hectares of agricultural land around Taiwan suspected of being polluted with heavy metals, and preliminary analysis has been completed on five hectares of these sites in Kaohsiung County. This analysis shows that 1.75 hectares of these five hectares are polluted with chromium, nickel, copper, lead and zinc. The EPA will complete its soil pollution survey of these 319 hectares before farmers harvest this year's first rice crop.

While the soil remediation project for the RCA plant in Taoyuan has been completed, further remediation work is required because groundwater pollution at the site still does not meet originally approved remediation targets. The EPA, based on the results of groundwater pollution verification work, ordered the Taoyuan County government to list this site as a regulated pollution control site on April 26. RCA, General Electric and Thompson Group are required to present and implement a pollution control plan for this site. Failure to meet this requirement will result in a fine ranging from NT\$1



Filling stations are a target of current EPA soil and groundwater pollution surveys.

million to NT\$5 million. These companies will be granted a limited period for submitting their plans, and additional fines will be imposed on a daily basis for each day this deadline is not met.

County and city governments have already listed the sites above that have already been determined to be polluted as regulated pollution control sites. These governments, in accordance with regulations, have also begun to oversee the implementation of necessary response measures and follow-up surveys and remediation work by polluters. This will prevent the spread of this pollution and protect public health and the environment.

For more information, please call 02-2311-7722 ext. 2770.

Recycling

New Waste Recycling Regulations Drafted

The EPA has drafted a number of new waste recycling regulations in order to coordinate with last year's revision of the *Waste Disposal Act*. The EPA expects these regulations to lead to the well-rounded development of Taiwan's waste recycling and handling system.

With the revision of the *Waste Disposal Act* having been completed in October 2001 (see EPM Vol. 4, Issue 11), the EPA has drafted a number of new waste recycling regulations in order to enhance the management of Taiwan's waste recycling system. These regulations, including *Management Regulations for Enterprises Responsible for Regulated Recyclable Waste* (應回收廢棄物責任業者管理辦法), designate explicitly which enter-

prises are responsible for regulated recyclable waste and provide management regulations for these enterprises. They also layout methods for the storage, recycling, clearance, and disposal of materials that are required to be recycled and establish standards for recycling facilities.

enterprises. This will help prevent the recycling process from causing secondary pollution.

The EPA, under Article 18 of the *Waste Disposal Act*, will further draft management regulations for recycling and disposal enterprises, management regulations for recycling, clearance and disposal

These revisions extend the scope of regulations to include, not just enterprises that receive EPA recycling subsidies, but all recycling enterprises. This will help prevent the recycling process from causing secondary pollution.

The EPA has drafted *Management Regulations for Enterprises Responsible for Regulated Recyclable Waste* in order to effectively manage enterprises that are responsible for the recycling, clearance and disposal of regulated recyclable waste. These regulations outline the procedures enterprises must follow when registering with the EPA and reporting production and import volumes of regulated recyclable products, and detail payment and refund procedures for recycling fees. These regulations do not pertain to enterprises that import regulated recyclable materials into domestic bonded zones, such as export processing zones and bonded warehouses.

In order to manage recycling organizations, the EPA has also drafted recycling, storage, clearance and disposal regulations and facility standards for the handling of waste electrical appliances, waste computer appliances and waste light bulbs and tubes. These clearly stipulate the various methods and hardware to be utilized for the handling of these materials. These revisions extend the scope of regulations to include, not just enterprises that receive EPA recycling subsidies, but all recycling

subsidy application reviews, and working guidelines for the auditing and certification of recycling and disposal volumes. These regulations will lead to the establishment of a comprehensive recycling system and promote the proper development of Taiwan's recycling enterprises.

For more information, please call 02-2370-5888 ext. 3301.

News Brief

Restart of Construction on Litzu Incinerator

EPA Administrator Hau recently inspected preparations for the restart of construction on the Litzu Incinerator (利澤焚化廠) in Ilan County. Hau called on incinerator personnel to uphold the principles of safety and quality in their subsequent work, and reiterated his confidence in the contractor Mitsubishi Heavy Machinery. The Litzu Incinerator occupies roughly ten hectares of land and will have a daily capacity of 600 tons of waste. After the original contractor suffered financial difficulties, another request for bids was issued, and Mitsubishi made the winning bid. It is expected that the incinerator will be completed by August 2005.

Air Quality

Improved Management of Motorbike Emissions Inspection Points

In its continuing efforts to promote regular motorbike emissions inspections, the EPA has made its primary goal the boosting of inspection rates. It also aims to improve its management of inspection points in order to ensure the credibility of emissions inspections. In addition, fines will be handed out to the owners of motorbikes that fail to pass random roadside inspections.

Estimates put the number of motorbikes presently in operation throughout Taiwan at over eight million. Hoping to reduce the air pollution generated by these vehicles, the EPA first introduced its regular motorbike emission inspection system in 1996 and expanded this system to all of Taiwan in July 1997. This system makes regular emissions inspections compulsory for all motorbikes and requires owners to repair motorbikes that do not pass inspections. By helping to ensure that all motorbikes meet emissions standards, the system allows the EPA to move a step closer to its goal of improving Taiwan's air quality.



Regular emissions inspections are provided free of charge at 1,898 inspection points around Taiwan.

that were discovered to have not taken their motorbikes in for regular emissions inspections. Consequently, the EPA has made boosting this inspection rate its primary goal for this system this year and plans to announce a "Motorbike Regular Emissions Inspection Month" this year. During this promotional month, the EPA will use television and radio advertising to increase its promotion of its

a trail program in Kaohsiung City and then expand this program to other county and city governments. The EPA will also step up its random roadside inspection work. In accordance with regulations, a fine of NT\$3,000 will be handed out on the spot to owners of motorbikes that are discovered to have not undergone compulsory annual inspections. Furthermore, the owners of motorbikes that fail to pass these random inspections will also be fined without the advantage of an improvement period. The EPA will also begin ranking inspection points based on service quality and professionalism so as to improve the management of existing inspection points and raise the quality of inspection services. The inspection points receiving the high-

...in 2001 this system achieved an inspection rate of 62.8% and led to the collection of NT\$130 million in fines...

EPA statistics reveal that in 2001 this system achieved an inspection rate of 62.8% and led to the collection of NT\$130 million in fines from the owners of motorbikes

regular emissions inspection policy. The EPA also intends to gradually transfer the responsibility for conducting these inspections to local governments. It will first run

est rankings will be posted on the Internet for public reference each quarter and a list of these top inspection points will be announced in October.

There are currently 1,898 inspection points around Taiwan. In order to ensure that emissions inspection equipment at these points is able to make accurate readings, the EPA began conducting spot checks and calibrating inspection equipment at inspection points in 1997. The results of these checks in 2001 show that 4.7% of the 969 sets of inspection equipment inspected did not meet standards. The primary reasons this equipment failed to provide accurate readings were failure to properly maintain and calibrate equipment, failure to regularly replace consumable parts, gas leakage from inspection pipes, and the use of out-of-date standard gases. Aiming to ensure the credibility of emissions inspections, the EPA has decided to adopt a new policy of checking and calibrating all inspection equipment at all regular emissions inspection points this year. It will also increase its rate of follow-up checks of inspection points that did not meet standards. These efforts will guarantee that motorbike owners receive the precise readings they are entitled to.

The EPA calls on all motorbike drivers take advantage of the one free annual emissions inspection they are entitled to. Not only will this allow them to take care of their motorbikes, it is also an opportunity to do their part to reduce air pollution.

For more information, please call 02-2311-7722 ext. 2787.

Water Quality

Marine Disposal Permit Regulations Drafted

Having studied relevant international treaties, the EPA has drafted Taiwan's marine disposal and incineration permit regulations in order to protect the marine environment and ensure the proper management of the disposal and incineration of waste at sea.

As part of its efforts to devise related regulations following the promulgation of Taiwan's *Marine Pollution Control Act* (海洋污染防治法) in November 2000, the EPA, under article 20 of this act, has formulated its draft of *Permit Regulations for Marine Disposal and Incineration* (海洋棄置或海上焚化許可辦法). Enterprises will be required to obtain permits from competent authorities before initiating any disposal or incineration of waste at sea.

Following the prohibition-permission regulations and principles of the London Convention, the EPA has designated three classes, A, B, and C, of waste materials in drafting its marine disposal permit regulations. The disposal of Class A materials at sea is strictly prohibited. Enterprises must obtain a permit each time they wish to dispose of Class B materials at sea. Class C materials are those not designated in classes A and B. An enterprise wishing to dispose of Class C materials must first obtain

a permit from the central competent authority and must adhere to specified time and volume limits.

The EPA's process for issuing permits for the delineation of marine disposal sites has been formulated based on domestic and international regulatory requirements for marine environment pollution control.

As for the incineration of waste materials at sea, this draft requires enterprises to apply for a permit from the central competent authority for each marine incineration case. Enterprises must also obtain an inspection certificate for their marine incineration equipment. The primary inspection criteria are a minimum destruction rate of 99.9%, a minimum incineration rate of 99.95%, and a minimum incineration temperature of 1250 degrees Celsius.

These draft regulations would also make it necessary for enterprises to make records of their marine disposal and incineration activities and provide these to the central competent authority and the Coast Guard Administration.

The EPA points out that as of the present no marine incineration has taken place in Taiwan, and that the only marine disposal currently permitted is the dumping of approximately 80,000 kilotons per year of leftover fermentation liquid by the monosodium glutamate (MSG) industry. The EPA notes that this fermentation liquid is pure organic matter that is actually a source of nutrition for marine organisms and therefore does not negatively impact the marine environment.

For more information, please call 02-2311-7722 ext. 2841.

Activity

Environmental Education Volunteer Corps Created

Administrator Hau presided over the presentation of certificates to 59 volunteers at the founding of the EPA's Environmental Education Volunteer

Corps on April 16. This corps has been established in order to employ the power of public volunteers in the promotion of the EPA's environmental policies. These 59 volunteers received certification as EPA environmental education volunteers following a half-year of stringent training and

evaluation. The first mission of the corps will be the promotion of the soon-to-be-implemented policy placing restrictions on the use of plastic shopping bags and plastic (including polystyrene) disposable dishes.

News Briefs

Draft Fundamental Environmental Protection Act Passes Committee Deliberation

The Legislative Yuan Health, Environmental and Public Welfare Committee passed the draft of the *Fundamental Environmental Protection Act* (環境保護基本法草案) after deliberation on April 24. This bill makes environmental protection the government's administrative priority, calls on the government to require environmental impact assessments and establish "polluter/beneficiary pays" systems, and designates June 5 as Environment Day in line with the UN's World Environment Day. Administrator Hau has expressed hope that this bill will be enacted before this year's Environment Day—announcing to the world that Taiwan is fully committed to environmental protection.

Initial Compensation Agreement Reached in Amorgos Case

After more than a year of negotiations, the EPA has finally reached an initial agreement with the insurance company representing the Amorgos' owners. The company has agreed to pay NT\$61,336,129 to cover oil spill cleanup work. The two parties are now to begin a second stage of negotiations concerning compensation for ecological and economic damages. More than NT\$900 million in cleanup compensation had originally been demanded for these damages. Also, the EPA will consider suing for compensation if a further agreement cannot be reached before the end of the year.

Diesel Auto Exhaust Inspection Certificate Regulations Revised

As a member of the WTO, Taiwan must allow the import of small diesel vehicles by 2003. The EPA has therefore revised diesel vehicle exhaust inspection certificate issuance, cancellation and revocation regulations to explicitly specify inspection procedures, the required documents, and subsequent vehicle sampling and inspection procedures, etc. In addition, the revised regulations also provide regulations governing the acceptance of inspection certificates issued in the European Union. All imported, in-use diesel vehicles are strictly required to possess test reports.

Large Enterprises to Employ Waste Disposal Specialists

In accordance with Article 28-2 of the *Waste Disposal Act*, the EPA will announce in batches that large enterprises, large medical organizations and firms that may generate hazardous industrial waste must, in keeping with their size and environmental impact, hire "waste disposal technology specialists." These waste disposal specialists shall bear responsibility for waste clearance and disposal work, helping the government strengthen control over industrial waste.

Green Mark Standards to be Set for Mobile Phones and Other Products

The EPA hired a professional organization to perform a product survey in order to better understand the public's Green Mark needs. Reflecting the results of this survey, electric rice cookers, plastic wrap, mobile phones,

transformers and composters have been selected as priority items when Green Mark standards are set this year. When the time comes, the number of Green Mark standards will rise from 72 to 77.

EPA Announces Technical Criteria for Plant Ecology Assessment

To prompt developers to pay more attention to ecological assessments while conducting EIA, the EPA announced the *Technical Criteria for Plant Ecology Assessment* (植物生態評估技術規範), which provides detailed criteria for plant ecology assessment procedures, content, and methods. When assessment organizations assess plant ecology in the future, they will have to take into consideration the existing plant ecology, the plant ecology background, and impact on the plant ecology.

Recycling of Waste Fluorescent Light Tubes Begins

The EPA began the recycling of waste fluorescent light tubes on January 1 of this year (only straight tubes can currently be accepted). If members of the public wish to dispose of any waste straight fluorescent light tubes, they may put them in a local government sanitation crew's recycling truck, or turn them over to a licensed recycling organization, or return them to the fluorescent light dealer. Four recycling and disposal facilities have currently applied to handle these tubes, and operations are expected to begin by the end of May. It is estimated that the recycling rate will be 30% during the initial period.

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