



# Environmental Policy Monthly

Environmental Protection Administration, Taiwan, ROC

## Feature Column

### Soil and Groundwater Pollution Controls Focus on Industrial Areas

Soil and groundwater remediation work has gradually progressed from pollution investigation and assessment to the stage of source control. In former years, the EPA first concentrated efforts on remediation of contaminated farmland, where the potential to affect human health is greatest. From 2004 this focus began to shift to industrial areas. The area of announced polluted industrial land now exceeds that of contaminated farmland.

#### Completion of Soil and Groundwater Remediation Regulations Establishes Legal Basis for Remediation

Public awareness of soil pollution in Taiwan began in 1984 with an incident involving cadmium contaminated farmland in Taoyuan County. Other landmark soil pollution events included an explosion of chlorinated organic solvents at an RCA (Radio Corporation of America) factory in Taoyuan in 1994, followed by dioxin contamination from the Taiwan Alkali Industrial Corporation's plant in Anshun in 2000. The recurrence of such incidents has drawn widespread attention to soil and groundwater pollution.

The EPA drafted the Soil Pollution Control Act (draft) (土壤污染防治法(草案)) in 1991. This was modified and renamed as the Soil and Groundwater Pollution Remediation Act (SGPRA)(土壤及地下水污染整治法), officially promulgated on 2 February 2000. The SGPRA provides the legal backing for soil and

groundwater pollution remediation work.

The SGPRA draws on the US Superfund concept by raising funds for the enormous remediation fees for pollution sites where there is no responsible party. The Soil and Groundwater Remediation Fund Management Board (SGRFMB) is responsible for collecting remediation fees for 125 types of chemical substances in six main categories, as well as handling related affairs. Collection of the soil pollution remediation fee commenced from November 2001, and draws in approximately NT\$700 million per year. By the end of March 2007, the SGRFMB had invested over NT\$1 billion in inspection and remediation work. At the outset of its establishment, the SGRFMB's main efforts were directed toward planning, coordinating, organizing, and drafting regulations for its management system as well as inspecting and verifying potential pollution sources. Since then, pollution remediation priorities have been determined according to site pollution conditions and effects

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on human health. Plans are then developed and implemented for pollution site management, control, remediation and supervision.

The EPA has developed nationwide implementation strategies to prevent soil and groundwater pollution. These strategies focus on six main categories of land: farmland, factories and industrial parks, gas stations and storage facilities, waste landfills, illegal dumping sites, and land with military facilities. The four main strategies employed are pollution prevention, site investigation, pollution remediation and land rehabilitation and reuse.

In recent years, local environmental agencies have had considerable success in managing and investigating pollution at active factories, abandoned factories, large-scale industrial parks, gas stations and other areas where there is greater potential for pollution. To make the best use of resources, the EPA verified potential pollution sites based on past industrial activities. From 2004 the EPA began narrowing down a list of 100,000 abandoned factories to prioritize for inspections. Factories were categorized based on pollution potential and according to quantified screening and assessment mechanisms. Inspections were carried out on 35 abandoned factory sites, including chlor-alkali factories, the dyeing and finishing industry, the pesticide industry, and steel factories. Serious pollution was discovered at half of these sites, attesting to the close relationship between industrial activities and soil and groundwater pollution.

### Soil and Groundwater Regulations toward Industry

Former environmental regulations on factories mainly concerned end-of-pipe control at discharge points, stack tops, or facility boundaries, while factory grounds fell under the jurisdiction of occupational safety. The implementation of the SGPRA, therefore, had far-reaching effects by extending controls to the land where factory operations took place.

Soil pollution is often the last environmental problem to be noticed, after damage has already been incurred. Most countries have similar experiences in dealing with pollution investigation and remediation in the wake of polluting development activities. Due to difficulties in tracing liability for past pollution events, such cases are rarely viewed as environmental crime and the most that can be done to those liable for causing pollution is to hold them responsible

for remediation. In most cases, the government is responsible for handling pollution where liable persons cannot be found and where the pollution seriously jeopardizes citizen and environmental health.

The SGPRA stipulates a dual threshold system for managing pollution sites. Where pollutant concentrations exceed control standards, necessary measures are adopted and polluters are tracked down. After verifying the pollution source, the site is announced as a pollution control site and pollution control plans are implemented according to actual needs. If the preliminary assessment of a control site gives reason to suspect danger to human health and living environs, the area is announced as a pollution remediation site. In this case, the responsible party is required to submit a remediation plan and execute remediation work (Articles 11 and 16). Remediation site land may not be transferred to another owner (Article 15). The local competent authority shall delineate and announce pollution control sites based on pollution boundaries. Land use and human activities shall be controlled based on human health and living environment requirements (Article 14). Demarcation of control sites has a great impact on active factories in terms of controlling soil removal or pumping of water. In principle, construction of new buildings and facilities and major land development activities within soil pollution control areas are prohibited. Apart from carrying out remediation responsibilities, all other operations within pollution sites are restricted.

Most laws are based on principles of trust and protection, and new laws cannot be used to punish



▶ Collecting samples from illegal dumps at abandoned factory

previous crimes. However, Article 47 of the SGPRRA stipulates certain requirements applicable to polluters in cases of soil or groundwater pollution occurring before the implementation of this Act. In other words, polluters are not necessarily off the hook for pollution activities that happened before 2 February 2000, when the Act was promulgated.

## Industrial Land Pollution Prevention and Control

In the past, most pollution of industrial land resulted from inappropriate treatment of wastewater, exhaust and waste. Such pollution incidents have decreased considerably over the last two to three decades due to continual improvement of environmental protection laws and heightened environmental consciousness. Leakage during industrial operations is now the main source of soil pollution, especially in the case of underground storage tanks and conduits, where leaks are harder to detect. Oftentimes serious



▶ Groundwater sampling at one pollution site

damage is already incurred by the time leaks are detected. Factory procedures are therefore very important in preventing soil and groundwater pollution. Strengthened management and planning of adequate hardware is a prerequisite to prevent pollution. Some measures to ensure early detection of pollution include lining areas with impermeable membranes, placing conduits and tanks aboveground, installing secondary barriers, oil dams, and installing monitoring equipment when necessary.

Environmental agencies have discovered numerous pollution sites in recent years during regular inspections of active factories, abandoned factories,

gas stations and other industries likely to cause pollution. Incidents at certain well-known factories have since impelled society to place greater importance on polluted industrial lands. This attention has served as a wakeup call for active factories. Moreover, industry financial organizations have raised risk awareness toward industrial land guarantees.

To prevent soil and groundwater pollution at the early stages and trace responsibility for pollution, the SGPRRA stipulates that the transferer of land used by regulated industries shall provide soil pollution inspection data. A land transferer that fails to provide the relevant data shall bear responsibility equivalent to that of the landowner if such land is officially announced as a pollution control site or a pollution remediation site (Article 8). Moreover, before establishing, halting or terminating business operations, regulated industries shall report soil pollution test results for all utilized land. This report is immediately reviewed to clarify pollution liability and to determine whether soil has incurred pollution, in which case the liable party is requested to conduct remediation work (Article 9). This system accomplishes two things: 1) It ensures the responsible factory or industry establishes an autonomous land quality management system, and 2) It includes land quality valuation in market mechanisms.

In December 2004, the EPA officially designated 16 types of factories including basic chemical industries as well as 18 other types of industries under four main categories including power companies, gas stations and the waste treatment industry. The above regulations were then put into effect for these industries from 1 January 2005. Articles 8 and 9 of the SGPRRA are applicable to factories engaged in designated manufacturing processes, provided the total area of land and open space around factories and annexing facilities reaches 100 square meters. The EPA is now reviewing the categories of designated industries for future plans in order to expand controls to more categories of industrial land.

## Risk Management and Brownfield Development Are Based on Land Use

In terms of sustainable use, the ideal scenario for remediation of polluted sites is to return the land to its original quality before pollution occurred, provided the methods are technically and economically feasible. However, when remediation costs exceed land value, remediation work is often delayed and the

land is abandoned as what is called a "brownfield." In the early stages of urban development, industrial areas were established on the outskirts of cities. As urbanization gradually expanded, the former outskirts became part of the city. Faced with urban expansion, some industries relocated in order to expand their factories; other industries closed their factories due to makeovers, environmental concerns or other reasons. Large pieces of polluted land in the prosperous downtown areas of Taiwan's cities have undergone remediation, making them precious resources in terms of urban development. However, environmentally destructive practices of former industrial activities, and the cleanup of pollution left behind, often poses an obstacle to redevelopment and sometimes even creates social or safety problems. Demand for land often leads to the development of pristine green areas, and a loss for the environment at large. Prompt

restoration is therefore the primary directive for handling polluted land. In light of the large number of brownfields and enormous remediation costs, in recent years advanced countries have adopted risk management methods if high standard remediation takes too long. Remediation objectives are determined for specific land uses under the preconditions of safeguarding citizen health and environmental safety. When necessary, supplementary control measures are implemented so that polluted land can have restricted uses after a certain extent of remediation is done within reasonable cost. The US EPA has established a brownfield fund to assist with polluted land investigation and remediation work. Environmental agencies, urban development agencies, developers and financial organizations all play a part in this effort. Taiwan will refer to this model in formulating future strategies for land remediation.

## Waste Management

### Over NT\$16 Billion Allocated to "Complete Sorting for Zero Waste" Policy

In March 2007, the Executive Yuan ratified the "General Waste Resource Cycling Promotion Plan" which will allocate over NT\$16.1 billion from 2007 to 2012 toward the promotion of Zero Waste goals. This plan aims to reduce waste by over 43% by the year 2012. The plan will effectively reduce the burden on waste treatment facilities and extend their lifetime, promote the ideals of a "Zero Waste Society," and encourage the efficient recycling and reuse of resources.

**F**rom 2004 to 2006 the EPA implemented the "Complete Sorting for Zero Waste 3-Year Plan." Statistics show 2006 garbage recycling rates reached 34.41%, already attaining the 2007 "Zero Waste" target for a 25% reduction of garbage. From 2003 to 2006, garbage clearance volumes decreased from 16,877 tonnes to 13,788 tonnes. In the same period, the daily per capita garbage clearance volume dropped from 0.752 kilograms to 0.605 kilograms. These are all record lows.

Carrying through with the Zero Waste policy and complementing the administrative focus on future garbage clearance, the EPA has identified seven focal tasks in the "General Waste Resource Cycling Promotion Plan." In terms of mandatory garbage sorting, the EPA will continue to carry out educational outreach on sorting garbage as well as provide subsidies to purchase 800 recycling trucks and gradually expand the number of days for collecting recyclables. A recycling rate of 35% has been targeted for the year 2012. It is estimated that each

year approximately 2.9 million tonnes of resources can be recycled and transformed into NT\$7 billion. As for diversification of food waste recycling, the EPA has subsidized the purchase of food waste collection equipment, washing equipment and vehicle attachments, and has provided food waste clearance services, and established a food waste recycling, sorting and clearance system. These measures are expected to result in the recycling of 748,000 tonnes of food waste by 2012, bringing in an annual return of NT\$2.9 billion. Efforts to diversify reuse of bulk waste are expected to result in the recycling of 70,000 tonnes of furniture and other bulk waste by 2012, bringing in an annual return of NT\$250 million. Furthermore, a collection system has been established to prevent illegal disposal of materials used in construction and interior remodeling. Subsidies have also been allocated to the establishment of 15 sorting and recycling centers. By 2012, these centers will be capable of recycling as much as 200 tonnes of construction materials per

day and 300,000 tonnes per year, creating a value of NT\$300 million per year in recycled materials for use in green building projects.

Another important aspect of the Complete Sorting for Zero Waste initiative involves removal and remediation of potentially dangerous waste stockpiles or environmental facilities. Old environmental facility

sites are rehabilitated and assigned more sustainable uses such as recreation facilities or refurbished as storage facilities to solve incineration ash and residue treatment problems. These developments integrate new landscaping and green building concepts where traditional environmental facilities once stood. Other measures are being taken to enhance and improve

existing septic sludge treatment facilities so that by 2012, treatment capacity will reach 1,900 tonnes per day. Taiwan's fleet of environmental protection vehicles will see a facelift as 2,803 old garbage clearance trucks are replaced from 2007 to 2012. This will raise clearance efficiency, reduce vehicle maintenance costs and decrease frequency of breakdowns.



## Recycling

### Plastic Bag Trial Recycling Expanded in April

In 2006, the EPA launched a trial project in 14 counties and municipalities to recycle plastic bags. Results have been good and the reuse channels established during this time are operating smoothly. Plastic bag recycling has thus been expanded to all 25 counties and municipalities from 1 April 2007.

The EPA has successively launched plastic bag recycling trial runs in 14 counties and municipalities from 1 May 2006. From May to December 2006, these 14 counties and municipalities have recycled 2,317 tonnes of plastic bags, equivalent to about 710 million of the commonly seen red-and-white striped bags. This achievement has far surpassed the original goal to recycle 900 tonnes of plastic bags. As for the recycling process, all plastic factories already equipped to make melted plastic pellets should be capable of processing clean and dry plastic bags. In addition, another four domestic factories are capable of processing over 800 tonnes per month of wet plastic bags. Downstream reuse channels are running smoothly.

The EPA recently convened all county and municipal environmental protection bureaus (EPBs) to evaluate the recycling of waste plastic bags. The decision was made to expand the program to include all 25 counties and municipalities starting from 1 April 2007. All municipalities are required to implement plastic

bag recycling throughout their jurisdiction, while some counties are asked to launch a trial project in at least one township. It is expected that this year's (2007) expansion trial project will result in the recycling of 5,000 tonnes of plastic bags.

Domestic technology for recycling plastic bags involves either wet or dry processing followed by melting into plastic pellets. The dry processing method requires higher quality plastic bags and requires people to make sure bags are empty and dry before handing them over for recycling. The dry process also requires that bags are free of oils. In contrast, wet processing methods include a washing process so people need only empty the bags before recycling.

Whether wet or dry methods are used varies from factory to factory, and thus plastic bag sorting methods may be different for each locality. Depending on recycling methods used in each locality, sorting instructions may state either "only clean and dry plastic bags," or "dirty plastic bags acceptable." People are asked to follow recycling instructions

and sort plastic bags into one bag before handing to designated garbage trucks or recycling trucks. However, people must comply with the recycling methods used within their own locality as stipulated by

each county and municipal EPB or township. Citizens are thus asked to take note of garbage sorting announcements by their EPB or sanitation crews or simply ask their EPB or local sanitation crew.

## Waste Management

### Electric Cable, Steel Door, Sewer Grate Recyclers Required to Record Transactions

In coordination with the Executive Yuan's measures to strengthen public safety, the EPA has revised the Responsible Enterprise Regulated Recyclable Waste Management Regulations (應回收廢棄物回收處理業管理辦法) to prevent recycling, clearance and treatment organizations from becoming a link in illegal trade channels. The revisions require these organizations to keep a daily record of the flow of materials collected for recycling, clearance or treatment including scrap electric cables, steel doors, sewer grates and other items designated by the EPA.

The "Plan to Strengthen Inspection of Electric Wires and Cables of Unknown Origin" drafted by the EPA works through the EPA Bureau of Environmental Inspection and the Environmental Police Unit, National Police Agency, Ministry of the Interior, as well as local environmental protection bureaus. The plan calls for a thorough inspection of related recycling, clearance, and treatment enterprises. From the beginning of 2007 to the end of March 2007, over 4,300 inspections have been carried out revealing over 15 instances of illegal collection or treatment of Taipower electric wires or cables. The inspection has confirmed over 13,200 kilograms of stolen Taipower cables.

The EPA emphasizes the focus of revisions requires enterprises to establish records of purchases and sales of designated items. Books are to be kept on daily purchases and sales including items, quantity, date, source, and destination. Data must be retained

for five years and provided to related agencies for inspection. Public hearings and discussions for the draft revision have already been held according to legal procedures and the revisions will be promulgated in the near future. The establishment of transaction records is expected to put an end to illegal trade channels and improve public security.

The EPA requires all enterprises collecting electric wires and cables to apply for permission from environmental protection bureaus. In no case shall any enterprise collect wires or cables of unknown origin. Violators will be charged with collection of stolen goods by the police. If activities involve obtainment of treatment permits through illegal means for the purpose of engaging in waste treatment services, violators will be subject to stipulations in Articles 41 and 57 in the Waste Disposal Act. Violators could face fines ranging from NT\$60,000 to NT\$300,000 and could be ordered to suspend business operations.

## Green Labelling

### Taiwan and Czech Republic Sign Ecolabelling Mutual Recognition Agreement

Taiwan and the Czech Republic signed an ecolabelling mutual recognition agreement in late 2006. The agreement was signed by the commissioned executive organization of the Taiwan EPA ecolabelling system (Environment and Development Foundation) and the Czech Republic counterpart, the Czech Ecolabelling Agency (CEA). After numerous discussions, these two organizations ensured operating procedures conform to UN ISO/CNS 14024.

The "Environmentally Friendly Products and Services" ecolabelling system used by the Czech Republic is implemented through the CEA, which

became the executive agency of the EU Flower Ecolabel in 2004.

The most important aspect of this mutual recognition

agreement is that it demonstrates other nations' affirmation of Taiwan's ability to effectively manage ecolabelling affairs. Taiwan joined with New Zealand's ecolabelling organization to become the first Global Ecolabelling Network International Coordinated Ecolabelling System (GENICES) partners. During this process, the Global Ecolabelling Network (GEN) sent three experts to Taiwan to audit the executive organization of the Taiwan ecolabelling system and confirm their capabilities and work standards comply with ISO/IEC standards.

This mutual recognition agreement presents an opportunity to assist the Czech Ecolabelling Agency in writing out the Czech ecolabelling plan in English according to GEN requirements. It also assists them in completing a comprehensive document on their ecolabelling implementation system, to be submitted to GEN when applying for accreditation this year (2007). The mutual recognition plan is an open and transparent document worthy of public trust. Each responsible party shall within its own boundaries handle company applications and document review

for the other responsible party's ecolabelling. From a business perspective, this method can reduce the cost of document translation and application procedures.

From an economic perspective, the mutual recognition agreement permits each signing party to handle ecolabelling review work for the other party, and even allows them to serve as an application window for the other country's ecolabelling system. Given the current proliferation of international sales of all types of products, Taiwanese companies are now allowed to complete required accreditation procedures for foreign ecolabelling from within Taiwan. This greatly cuts down on foreign ecolabelling application costs for Taiwan's products and helps open the market for Taiwan companies.

Since 1998, the Environment and Development Foundation has represented the EPA in signing mutual recognition agreements with ecolabelling organizations in the following nine countries: the US, Canada, Japan, Korea, Thailand, New Zealand, Australia, Ukraine and the Czech Republic.

## Water Quality

### Taiwan and US Hold Joint Forum on Vessel Pollution Prevention

Working to strengthen inspection of vessels illegally discharging oily wastewater in Taiwan's marine environment, the EPA invited six US legal, coastal patrol and environmental experts to Taiwan through the Taiwan-US Cooperation Plan to a forum on "US' Experience in Prevention and Enforcement of Vessel Pollution" on 6 March 2007. This forum focused on the US' experience in successful law enforcement to counter illegal discharges of oily wastewater from vessels into the ocean. The forum provided an opportunity for exchange between domestic organizations handling marine pollution control work and has helped to hone related law enforcement skills in Taiwan.

**T**he marine pollution control experience exchange forum lasted one week, also tying in with another forum held by the Keelung District Prosecutors Office and the Keelung Harbor Bureau, Ministry of Transportation and Communications on 5 March 2007. This event was used to introduce the experience of US Justice Department prosecutors and Port State Control Officials in prosecuting and preventing vessel pollution to Taiwan's legal prosecutors and maritime Port State Control Officials. From 7-9 March 2007 the US Coast Guard shared practical vessel investigation methods at the Coast Guard Administration and the Kaohsiung Harbor and led domestic marine pollution control prosecutors, coastal patrol officials, maritime and environmental officials aboard oil tankers and

bulk carriers for practical training in joint inspections. This exercise ensured that all organizations were familiar with joint inspection procedures and enhanced working ties between these organizations.

The EPA indicates that to decrease pollution problems from marine vessels' illegal discharge of oily wastewater, a delegation of 15 environmental, legal, harbor bureau and coastal patrol officials was sent to Washington D.C. and Seattle for training to learn onboard pollution inspection procedures and exchange experience. The US Coast Guard and US EPA accompanied Taiwanese personnel for an onboard inspection of required pollution control equipment and relevant recordkeeping to confirm whether vessels are doing prevention work or not.

The EPA points out that some vessel companies or captains sometimes directly dump oily wastewater into the ocean or fail to keep records according to regulations to save on costs of pollution control equipment or operations. In some cases, they even falsify data, resulting in criminal offense. The Taiwan-US Cooperation Plan thus specifically requested the attendance of prosecutors and inspectors so as to ease future inspection and prosecution and ensure that illegal pollution of the marine environment is penalized.

The international arena is taking greater steps to prevent vessel pollution through inspection work. Although the Harbor Bureau, MOTC, is conducting

Port State Control inspections and the Coast Guard Administration is also frequently carrying out onboard inspections, this area of work involves many international treaties and fields of expertise; there is a lack of close cooperation between agencies and there are still many gaps to fill. The US has already made efforts to effectively integrate vessel inspection work among each agency, making it very worthwhile for the EPA to continue cooperation with the US. These exchanges will assist in evaluating the domestic situation, after which related agencies will be well prepared to jointly plan future vessel pollution prevention and enforcement work.

## Air Quality

### Strict Penalties for Discharging Cooking Smoke and Odors into Sewers

From 1 October 2007, household and restaurant cooking smoke and odors discharged into sewers will be regulated under the Air Pollution Control Act (空氣污染防制法). Article 31 of this Act stipulates penalties ranging from NT\$100,000 to NT\$1,000,000 for such conduct.

**E**PA statistics on public nuisance complaint data from 2002 to 2005 show that complaints toward the food and beverage industry have been on the rise, mostly concerning odor and noise pollution. This indicates that a lack of adequate improvements to pollution from the food and beverage industry is causing serious disturbance to nearby residential environments.

Cooking smoke from most household kitchens is predominantly drawn out with range hood extractor fans and directly emitted into the atmosphere. Household range fans lack filters to prevent oils or odors from being released into the air, and therefore are more likely to cause odor pollution issues for nearby residents.

Regarding treatment methods for cooking smoke from the food and beverage industry, surveys show that currently about 51% of businesses have installed only

baffle filter hoods or other pretreatment equipment, while 32% of businesses have additionally installed post-treatment equipment. However, some businesses have not installed any air pollution prevention equipment, and cooking smoke and odors are directly discharged into the air. In some cases, exhaust conduits are connected to rainspouts or sewers. Grease buildup in such situations can obstruct water drainage and cause odors and other air pollution or sanitation problems.

The EPA will give enterprises a half-year grace period in which to respond, starting from the announcement date on 12 April 2007. From 1 October 2007, priority will be given to regulating the discharge of kitchen exhaust into sewers. This measure is expected to reduce air pollution problems caused by the food and beverage industry and household kitchens, and decrease the number of public nuisance complaints.

## Water Quality

### 97.5% of Factories Connected to Industrial Zone Sewers

Inspection and evaluation results of industrial park sewer systems show that 97.5% of factories within 47 regulated industrial parks are hooked up to the park sewer systems. COD pollution has been reduced by 80.2%.



Tying in with industrial park water pollution investigation and management, the EPA conducted a nationwide audit and evaluation of 47 industrial park sewer systems for two consecutive years in 2005 and 2006. Results indicate that out of 309 deficient areas in the 2005 evaluation, improvements were completed or were underway in 95% of these areas by 2006. One such success story is the Chungli Industrial Park, which was originally evaluated in 2005 as "urgently pending improvements," and has now moved up into the top third. Overall, 97.5% of industrial park factories are connected to regulated sewer systems. Chemical oxygen demand (COD) pollution has been sharply reduced by 80.2%. Sampling of rainwater sewer systems showed 25% noncompliance in 2006 compared to 35% noncompliance in 2005.

According to the EPA's evaluation results for 2006, nine industrial parks, including Hsinchu Industrial Park, showed outstanding performance in sewer system management. Five industrial parks, including Baoyuan Industrial Park, are still pending improvements and the remaining parks were rated average. Many industrial parks were rated top performers in successive evaluations for years 2005 and 2006. Hsinchu Industrial Park jumped from third place in the 2005 evaluations to first place in 2006, showing better performance that year than even the Hsinchu Science-based Industrial Park.

The past two years of evaluation results clearly show that water pollution management performance in the

new science-based industrial park system exceeds that of traditional industrial parks due to relatively more abundant resources of science parks. In general, improvements are pending at industrial parks where county and municipal governments are responsible for developing management systems. Despite differences in terms of competent authorities, resources and manpower designated for each industrial park sewer system, all are putting effort into improving park water pollution through friendly competition to perform well on evaluations.

In recent years, the EPA has successively implemented many strengthened control measures addressing industrial park wastewater treatment and discharge. The EPA emphasizes that although these measures have led to improvements in terms of pollution from industrial park rainwater drainage systems, two years of evaluation results show there is still room for improvement to major problems such as rainwater drainage inspections, rainwater drainage with suspected illegal piping of water, and inadequate control of pre-treatment plants. Compared to 2005 industrial park investigation and control results, violations resulting in penalties by environmental agencies increased 44% overall in 2006. Half of violations involved illegal piping of pollutants into rainwater sewers. Environmental agencies still need to put a priority on industrial park rainwater sewers that are polluting water bodies outside of the parks.



*97.5% of industrial park factories are connected to regulated sewer systems*

## CCA Wood Banned from Household Uses

Eliminating chances for direct contact with chromated copper arsenate (CCA) treated wood, the EPA has banned the use of this material in: 1) interior building materials, furniture, and outdoor tables and chairs; 2) playgrounds, landscaping, patios, walkways and fences; and 3) other areas where there is a potential for direct skin contact. Building posts and beams, bridges and foundations in contact with the earth are not restricted under this measure.

**C**hromated copper arsenate is a water-soluble wood preservative impregnated into wood via pressurization to preserve its lifespan and prevent fungus, microorganisms and termites. CCA-treated wood releases arsenic and chromium when exposed to weathering, rain, or acids in soil, posing a risk to human and environmental health. Another potential risk is direct exposure to CCA-treated wood, which could occur via skin contact or ingestion through the mouth.

The EPA indicates that this measure affects competent authorities on trade, inspection and environmental protection. After intensive discussions between the EPA and trade and inspection agencies a set of measures was formulated to jointly manage CCA raw materials and uses of CCA-treated wood. The EPA has already drafted an educational manual, "Precautions on Using CCA-Treated Wood." All agencies have been asked to help promote educational initiatives, and the building materials industry has even agreed to help spread awareness of CCA.

In the future, environmental agencies shall appropriately manage sites where CCA-treated materials are used, according to the Toxic Chemical Substances Control Act. Registration and inspection methods will be adopted to protect the public by preventing unscrupulous businesses from violating restricted use measures. Additionally, from 1 April 2007, the Ministry of Economic Affairs Bureau of Standards, Metrology and Inspection will provide testing service to determine concentrations of chromium, arsenic and copper in preservative-treated wood products.

The US EPA prohibited household uses of CCA-treated wood on 1 January 2004. In January 2003, the EU called for a ban on the sale of CCA-treated wood for uses in residential areas and in products that could come into contact with human skin. Japan tightened standards on arsenic discharges in wastewater, and businesses have also voluntarily taken steps to reduce the use of chromated copper arsenate in compliance with discharge standards.

### Environmental Information

## EPA Obtains ISO 20000 Accreditation

The EPA has obtained ISO 20000 accreditation on 14 March 2007, making it the nation's first government organization to obtain accreditation for this international standard, and turning a new page for Taiwan's government in terms of managing the quality of information services. Accreditation was obtained from the British Standards Institution (BSI) branch in Taiwan, working in coordination with IBM Taiwan Headquarters.

**T**he EPA indicates the purpose of introducing this Information Technology Service Management (ITSM) standard accreditation is to raise the quality and efficiency of the EPA's information service management. Developing services and standards for information management can effectively enhance the flexibility and supportability of information application. It can also raise cost effectiveness of information investments. The introduction of ITSM involves integrating the best practices of the Information Technology Infrastructure Library (ITIL) to reform

internal information handling and processing. The systems and computer installations introduced include document management, administrative applications and intranet websites.

Success in obtaining ISO 20000 accreditation is in part attributed to the EPA's investment in six more personnel and related resources from 19 April to 25 December 2006. This new manpower helped complete the design of 25 standards and documents, and organized three comprehensive educational training workshops. Study groups were also organized

as well as regular weekly and monthly evaluations and improvements.

This plan complements government organizational reform and conforms to the Research Development

and Evaluation Commission's management principles on information centralization by ensuring timely simplification of EPA information processing and establishment of management mechanisms. This initiative not only assists in raising environmental administrative effectiveness and international competitiveness, but also helps gain rapid command over developments in service information to ensure unobstructed channels for government and citizen interaction and rapid response to citizen demands.



▶ Department Director-General Hsiao Hui-juan (center) accepts award on behalf of the EPA Department of Supervision Evaluation

## News Briefs

### Plastic Egg Cartons, Fresh Produce Trays to Be Reduced 15% in July

To reduce the amount of plastic used in packaging, the EPA formally passed a new plastics restriction policy in March 2007. From 1 July 2007, mass merchants, supermarkets, shopping centers, and department stores will be required to make a reduction plan on PET, PS, PVC, PE, and PP plastic packaging of egg cartons, fresh produce trays (for fruit, meat, salad, etc.), and boxes for baked items including cakes, cookies and breads. Annual reduction rates for the next two years have been set at 15% (2007) and 25% (2008). Reduction rates for future years will be determined according to achievement rates of designated public and private facilities in prior years. This policy has already been announced to the WTO. The EPA calls on all industries to comply with this new plastics restriction policy. Violators will face fines ranging from NT\$30,000 to NT\$150,000.

### Fans and Keyboards Designated as Mandatory

### Recyclables

Recycling, clearance and treatment subsidy rates have been set for fans and keyboards. This measure is expected to effectively promote recycling of these newly designated mandatory recyclables and ensure unobstructed channels for their recycling and treatment. Rates have been set at NT\$20 for each electric fan and NT\$12 for each keyboard, effective in the last half of 2007. This subsidy is applicable to enterprises engaged in collection, clearance and treatment of electric fans and keyboards and eligible to receive subsidies. Further information can be viewed on the following website of the EPA's latest announcements: <http://atftp.epa.gov.tw/announce/index.htm>

### Tightened Controls on Import/Export of Bare Copper Wire

To prevent illegal trade channels for bare copper wire after shielding has been removed, the EPA made a preannouncement of revisions to the Categories and Requirements for Post-Industrial Recycled Materials (屬產業用料需求之事業廢棄物種類) on

16 March 2007. Scrap bare copper wire has been excluded from the list of scrap single metals. The export of bare copper wire shall proceed according to regulations in the Waste Disposal Act, which requires first applying for a permit from the county or municipal environmental protection agency. The revisions also relax restrictions on the composition of scrap magnesium slag to 40%, making it consistent with primary ingredient requirements for other designated "scrap single metals (copper, zinc, iron, aluminum, tin, titanium, silver, magnesium, germanium, nickel and tungsten)." A public hearing was held on 16 April 2007 to discuss this revision, which will be promulgated at a later date.

### 2.77% of Gas Stations Noncompliant with Soil Pollution Standards

Up to April 2007, the EPA has inspected a total of 1,771 gas stations, 49 of which have been listed under regulatory control. Thirteen of these gas stations have

been removed from the list and the others are currently making the necessary corrections.

As part of a general inspection of the nation's gas stations to ensure citizens' health and environmental safety, the EPA is successively conducting inspections on the remaining 1,200 gas stations that have not undergone soil and groundwater inspections. In addition, the EPA promulgated revisions to the Gas Station Groundwater Pollution Prevention and Monitoring Equipment Installation Management Regulations (加油站防止污染地下水體設施及監測設備設置管理辦法) on 4 July 2006 to thoroughly eliminate soil and groundwater pollution at gas stations. This self-management measure adopts early controls to prevent pollution of soil or groundwater.

### Factory Building Effluent

### Discharge Requirements Revised

On 2 March 2007, the EPA promulgated the Restrictions on Installing Discharge Points of Building Effluent Treatment Facilities (建築物污水處理設施放流口設置期限) according to the Regulations Governing Water Pollution Control Measures and Test Reports (水污染防治措施及檢測申報管理辦法). Sites where effluent generated by factory offices, worker dormitories and other premises is treated separately from industrial wastewater, shall comply with regulations on installation of effluent discharge points according to Treatment Methods for Building Effluent Treatment Facilities. All necessary improvements shall be completed within six months from the date of promulgation.

### Noise Control Standards Revised for Emergency Vehicles

### Vehicles

To ensure tower-ladder firefighting vehicles and other specialized vehicles used during accident relief work comply with the Fourth Stage Motor Vehicle Noise Control Standards (effective from 1 January 2007) and complete permit application procedures, the EPA has made a preannouncement of revised content in the chart under Article 3 of the Motor Vehicle Noise Control Standards (機動車輛噪音管制標準). The new draft proposes changes to acceleration noise standard values for new model examinations and new vehicle inspections. The new values are 81dB(A) for engines <150kW and 83dB(A) for engines ≥150kW. The new stipulations apply to fire engines (and fire engine chassis) and tower-ladder trucks over 3.5 tonnes and possessing relevant documents to prove the vehicle is used for firefighting and disaster relief.

## Activities

### Seminars on Revisions to Hazardous Industrial Waste Identification and Facility Standards

Revisions to the Standards for Defining Hazardous Waste and Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste were promulgated on 14 December 2006 in response to rapid changes in industry structure and international trends on control of waste import and export. Three seminars were held in Taipei (29 March), Kaohsiung (11 April) and Taichung (25 April) to ensure enterprises fully understand

the focus of revisions and the legal implications of these two standards. The EPA has granted a grace period of one year to prevent these revisions from having an overwhelming impact on industry.

### EPA Offers Free Showings of "An Inconvenient Truth"

The EPA has begun promoting the film "An Inconvenient Truth" this April (2007) to enhance public awareness of global warming in Taiwan. All interested schools from the junior high school level and above, environmental NGOs, public welfare groups or community organizations can apply to

have this film shown free of charge as a public educational activity on climate change. The documentary is helpful in increasing public awareness and understanding of climate change issues, as well as giving people incentives to reduce carbon dioxide emissions through everyday actions. The announcement of this offer was met with enthusiastic response from all circles, including local corporations Shin Kong Financial Holding Co. Ltd. and China Steel Co. Nearly 100 showings have been arranged and an estimated 40,000 people in Taiwan have already seen this film.

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#### Publishing Directors

Chang Tzi-chin; Tung Te-po

#### Editor-in-Chief

Roam Gwo-dong

#### Executive Editors

Y. F. Liang; Chang Shiu-an-wu;  
Hsiao Lee-kuo; Chang Shao-wen;  
Peter Morehead

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For inquiries or subscriptions to the printed version, please contact:  
Environmental Policy Monthly

Environmental Protection Administration  
Office of Science and Technology  
Advisors

41, Sec. 1, Jhonghua Rd.,  
Taipei, Taiwan, R.O.C.  
tel: 886-2-2311-7722, ext. 2207.  
fax: 886-2-2311-5486  
e-mail: [umail@epa.gov.tw](mailto:umail@epa.gov.tw)

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