



Environmental Policy Monthly

Environmental Protection Administration, R.O.C. (Taiwan)

Feature Column

Regional Collaboration on Waste Treatment: Policy and Practice

Since the program to construct county and municipal waste incineration plants has been terminated, the EPA has been working to solve waste treatment problems and use existing incinerators more efficiently. To encourage sharing of resources, the EPA has assisted six counties and municipalities to initiate "garbage for ash" swap programs. As more successful operating models for regional cooperation in waste treatment come into being, the next step will be to gradually promote implementation on a larger, more comprehensive scale.

The concept of regional cooperation (partnerships) became popular in the 1990s through the Organization for Economic Co-operation and Development (OECD). Policies on environmental protection and economic sustainable development require regional collaboration between all local governments. Pooled effects can be brought into full play and local competitiveness can be increased by integrating resources and action.

Looking at Taiwan's current state of waste treatment, one concrete measure required to gradually promote the Zero Waste policy and achieve the objective of zero waste is to promote cross-county/municipality cooperation in treatment of waste.

Sharing Resources – Hualien and Yilan Set First Example of Collaborative Garbage Treatment

The EPA has been actively assisting local governments in promoting regional cooperation in waste treatment. The first successful example was a cooperation plan between Hualien County and Yilan County. Hualien now sends its waste to Yilan in exchange for Yilan's incineration ash.

The Executive Yuan terminated former plans to build incineration plants in Nantou County, Hualien County and Hsinchu County. In order to solve the waste treatment problems of these counties, and to maximize the operating efficiency of existing incineration plants, the EPA drafted the Complete Sorting for Zero Waste Plan – First Phase Executive Plan. This plan subsidized the three counties' garbage transshipment costs. Recent (2007) statistics below show waste volumes of these three counties, which have been assisted with setting up regional cooperation plans to transfer waste to

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neighboring counties' incineration plants:

From January 2007 to October 2007:

Nantou County transferred 74,002 tonnes of waste

Hualien County transferred 41,006 tonnes of waste

Hsinchu County transferred 95,113 tonnes of waste

In July 2005, the EPA assisted Yilan County and Hualien County governments in signing a waste treatment regional cooperation contract. This was followed by a similar contract arrangement between Nantou County and Taichung County in March 2007. To guarantee the rights and duties of the cooperation partnership, the EPA acts as a witness for long-term waste treatment regional cooperation, thereby strengthening the effectiveness of policy implementation.

Some counties and municipalities are unable to use incineration plants for special reasons. For example, problems arose for the Yunlin County BOO waste incineration plant due to litigation on compensation for breaking an agreement. Before the incineration plant went into operation, the EPA quickly assisted Yunlin County with setting up cross-county transfer of waste for treatment in other counties' (including Tainan County) incineration plants. From January 2007 to October 2007, Yunlin County transferred 52,718 tonnes of waste.

Addressing funding sources, in order to more smoothly promote this policy in the future, the EPA drafted the Framework for Subsidizing Regional Cooperation in Waste Treatment on March 2007. Subsidies will go toward facilities and costs associated with regional cooperation between county and municipal governments. The government public service budget allows a subsidy of NT\$180 per tonne

of waste or incinerator ash per cooperating county or municipal government. This will go toward balancing the costs of facilities in areas with waste transfer routes.

Seven Regions Delineated to Implement Nationwide Regional Cooperation

Although this is merely the first phase of promoting regional cooperation in waste treatment, in considering the long-term and full scale implementation of this policy, the EPA has delineated the island into seven large regions. The neighboring regions are to successively implement this policy based on the current successful operating models. The regions are as follows:

1. Taipei City—Taipei County—Yilan County
2. Taoyuan County—Hsinchu County—Miaoli County
3. Taichung County—Changhua County—Nantou County
4. Yunlin County—Tainan County
5. Kaohsiung City—Kaohsiung County—Pintung County
6. East Coast (Hualien County and Yilan County)
7. Offshore islands transferring waste to Taiwan: Matsu to Keelung; Kinmen to Taichung County; Penghu to Kaohsiung

As for counties and municipalities currently already engaged in regional cooperation, the following tangible benefits are already evident:

1. Regional cross-county/ municipality cooperation in waste treatment is reducing environmental impact by decreasing waste transport distances, increasing facilities' usage rates and energy efficiency, and decreasing operating costs.
2. Regional mutually beneficial waste treatment methods reduce disputes. Counties and municipalities are assisted to establish emergency



▶ A Nantou County Renai Township garbage truck empties its load at the Wuri Incineration Plant in Taichung County

mutual beneficial treatment models. The issue of waste generated during annual maintenance and disasters is being resolved. Disputes concerning county and city establishment of treatment facilities are reduced.

3. Priority is given to solving waste treatment problems of counties and municipalities without incineration facilities. They are assisted in planning reuse facilities and environmental eco-parks to reach the objectives of waste reduction.
4. Regional cooperation complements the policy to keep garbage out of landfills from 2007. Priority is given to assisting cross-county or cross-municipality programs for treating the large volumes of waste generated after disasters.

Greatest Policy Challenge: Resolving Differences Between Local Governments and Citizens

Based on the EPA's experience in recent years in promoting regional cooperation of waste treatment, the primary difficulty it has run into is discrepancy due to a low degree of acceptance by the public which has thwarted headway of further promotion. Currently, each county and municipal government manages the business operations of existing incineration plants and sets treatment fee standards for waste entering plants. Currently, the greatest setback of implementing this policy is selfish departmentalism, which often results in refusal to allow waste from another county enter one's own incineration plants. Another difficulty is the frequent occurrence of incineration plant shutdowns for annual repairs during off-peak periods of electricity usage. Many incineration plants are unable to treat waste during this period. This increases the complexities of coordinating regional cooperation on waste treatment. The costs of transporting waste long distances and maintaining vehicles increases, and transport may result in secondary public nuisances such as noise and pollution. This often incites citizen rejection of such proposals.

Citizens and parliament boycotting of such proposals due to transport related environmental impacts is often the greatest obstacle in promoting "cross-regional waste treatment." Potential environmental aspects include operation of treatment plants, secondary public nuisances like noise, land pollution, hazardous substances (dioxin and heavy metals), and odors. Other problems include impacts to traffic and the issue of compensation for affected parties.

Despite the above problems and discrepancies, in order to move forward on this policy, the EPA has already set work objectives and guiding principles for responses and solutions. The first step is overall planning or enactment of legislation to seek optimal use of national land and open the doors beyond the often parochial regional view of local governments. Goals include raising treatment capacity and efficiency of existing incineration plants and reducing the social costs of citizen protest. Meanwhile education should be strengthened to help citizens understand objectives, and communication coordination mechanisms should be established to assist the development of regional cooperation.

Secondly, to resolve waste treatment problems when plants are under annual repair, the central government coordinates with local governments' incineration plants to develop an evenly distributed annual repair schedule. This will increase the ability for regional cooperation to creatively adapt, investigate the extra available capacity of incinerators during operation and seek mutually beneficial cooperation and mutual



▶ Bureau of Environmental Inspection Inspector General Hoang Jang (left) presiding over county and municipal waste incineration plant operation annual maintenance liaison meeting

support between counties and municipalities to upgrade waste treatment efficiency. Meanwhile the results of already implemented cross-regional waste transshipment can be reviewed and evaluated to make timely corrections.

The timeline of this plan goes to 2009 with annual goals to treat the following volumes of waste through regional cooperation:

2007: 300,000 tonnes

2008: 330,000 tonnes

2009: 350,000 tonnes

Since implementing island-wide regional cooperation of waste treatment, no waste has gone into landfills in 2007, with the exception of waste from remote areas. Waste reduction objectives have been set at 25% in 2007, 40% in 2011, and 75% in 2020, by which time society should be well on the way to sustainably recycling its resources.

International Affairs

Taiwan-US Pesticides Management and Ash Treatment International Forum

The EPA recently invited USEPA officials to Taiwan for the Taiwan-US Pesticides Management and Ash Treatment International Forum. The purpose of the event was to strengthen exchanges on environmental applications of pesticides in Taiwan and the US, management of toxic chemical substances, and treatment of waste incinerator ash.

To foster exchanges between Taiwan and the US on issues related to pesticides, toxic substances and waste management, the Taiwan EPA invited Mr. Frank Sanders, Director of the Antimicrobial Division of USEPA's Office of Pesticide Programs, and Dr. Charlie C. Lee, former USEPA waste treatment expert, to give presentations at the Taiwan-US Pesticides Management and Ash Treatment International Workshop, held on November 29, 2007. The opening session of the workshop was personally conducted by EPA Minister Dr. Winston Dang. The EPA intended to use this occasion as a model for future environmental exchanges between Taiwan and other government agencies.

In his opening remarks, Minister Dang pointed out that in the 1960s, the book "Silent Spring," had aroused the world's attention to the use of DDT which caused environmental hazards. And in the 1970s, people's attention turned to the treatment and recovery of PCB waste. In the 1980s, we had to deal with DIOXIN emissions. Facing the impact of such toxic chemicals, advanced nations applied their wisdom and came up with control measures and reduction technologies to overcome the challenges one by one. As the government confronts a fast-changing society, it has to ponder how to formulate policies and apply technology to reach a balance between environmental protection and economic development.

To help bridge the gap between domestic industries and advanced foreign management know-how and

technologies, the EPA invited Mr. Frank Sanders, Director of the Antimicrobial Division of USEPA's Office of Pesticide Programs, and Dr. Charlie C. Lee, former USEPA waste treatment expert, to come to Taiwan for a dialogue. The workshop's main focuses were: pesticide, insecticide and environmental agent management and incinerator ash treatment. The morning workshop saw Mr. Sanders deliver a presentation on the Current Status of US Antimicrobial Pesticides Regulation. On the Taiwan side, officials from the Council of Agriculture and the EPA focused on Taiwan's pesticides management and environmental agent and toxic substance management. In the afternoon workshop, Dr. Charlie Lee gave a presentation on Recycling of Waste Incineration Ash. Dr. Y.L. Mao of Soo-Chow University and Director Stephen Shen of Taipei City Environmental Protection Department also gave talks on topics related to incinerator ash and fly ash. Participants actively took part in the question-and-answer sessions following the presentations.

The EPA points out that the day's event established a platform for exchanges on environmental agents and incinerator ash management, and that such a platform can serve as a model for future exchanges between the industry, government, and academia. Such exchanges will allow Taiwan to gain the benefits of the American experience and better formulate the necessary management measures.

Soil and Groundwater Pollution Act Draft Revision Ready for Legislative Review

The Executive Yuan recently approved draft revisions to the Soil and Groundwater Pollution Remediation Act and sent the draft to the Legislative Yuan for review. The spirit of this round of revisions is to put into practice principles for penalizing those responsible for soil and groundwater pollution. Those responsible or potentially liable for pollution are required to pay compensation.

A draft revision to the Soil and Groundwater Pollution Remediation Act (SGPRA) (土壤及地下水污染整治法) was submitted to the Executive Yuan on 28 November 2007 and was subsequently approved during the 3,068th assembly. The Executive Yuan sent the draft to the Legislative Yuan for review on 4 December 2007.

The current Act contains 51 articles; the revised version contains 57 articles. The main focus of revisions is as follows:

1. Develop regulations on sharing liability for carrying out site inspection and remediation for those whose accumulated pollutant emissions result in environmental pollution.
2. Reinforce liability and duties of those involved with polluted land.
3. Increase regulations for regular monitoring of soil and groundwater in areas with high pollution potential (such as industrial areas, science-based industrial parks).
4. Create a technician certification system to ensure quality and effective execution of plans.
5. Add regulations on tasks of competent authorities for sites where natural environment background factors have caused soil and groundwater pollution.
6. Add regulations regarding prohibited activities on control site land (such as land transfer, partitioning, establishing or abandoning land ownership rights, etc.).
7. Comprehensively build existing health risk assessment mechanism and add that pollution site remediation goals can be set according to health risk assessment results to reduce pollution remediation costs and accelerate remediation work.
8. Expand remediation fund and in the future do not limit collection of remediation fees to chemical substances – include other substances or products likely to cause pollution into the scope of fee collection.
9. Ensure that competent authority expenses are promptly paid off by adding regulations to stipulate that the registered property of polluters or other liable entities shall not be transferred (relocated), and other rights shall not be established.
10. Delete regulations requiring payments to the remediation fund before implementing polluted land development plan, in order to increase economic incentives to develop land.

The EPA indicates that in the past, the SGPRA focused on remediation and penalizing pollution misdemeanors after the damage had already been done to soil or groundwater. However, once the draft revisions are implemented, penalties will be issued to polluters of soil and groundwater or those associated with such lands who neglect their management responsibilities, resulting in the announcement of their land as pollution sites. In addition, those associated with polluted lands who have neglected their responsibility should pay expenses for costs of pollution site investigation and improvement work, according to the competent authority. The polluter and potentially liable persons should bear responsibility for related compensation.

The EPA states the primary purpose of this revision is to get businesses to strengthen prevention of soil and groundwater pollution. In addition, procedures to protect the property of liable persons will prevent landowners from transferring land before carrying out pollution improvement measures. Land users, managers or owners are advised to take heed of land management affairs.

Air Quality

Air Pollution Control Fee Collection Regulations Revised

On 30 November 2007, the EPA promulgated revised articles of the Air Pollution Control Fee Collection Regulations. Revisions were made to air pollution control fee applications, review, approval and periodic payments. To lighten the burden on industry, those with financial problems can pay pollution control fees over a maximum of 24 installments.

The EPA indicated that from 1 July 1998, the fee system for stationary pollution source emissions of SO_x and NO_x was changed to collect air pollution control fees based on actual emission volumes. This has been the practice for the last decade, and by 2006 a cumulative total of over NT\$14,794,920,000 has been collected. SO_x emissions were reduced by 80,770 tonnes, and NO_x emissions were reduced by 57,672 tonnes. This achieved the goal of using economic incentives to get industries to make reductions.

However, in recent years, upon reviewing administration of stationary pollution source air pollution control fees, the EPA discovered that some industries often pay more or less than they should due to negligent reporting. Therefore the EPA is making revisions to reduce erroneous reporting.

To complement the government's electronic streamlined reporting system, additional revisions were made to require public and private facilities to install continuous automatic monitoring equipment

or conduct regular examinations, and report their air pollution control fees online. As for public and private premises with smaller emissions, the practice of seasonal reporting has been changed to biannual reporting to reduce administrative work for these businesses. A total of 3,946 public and private businesses will benefit from this measure. Public or private premises facing economic hardship due to natural disasters or requirements to pay over NT\$300,000 in additional air pollution control fees can apply for installment plans with increased interest rates, for a maximum of 24 installments. The EPA hopes that this measure helps industries fulfill their duties.

The EPA anticipates this revision will make regulations more concise and comprehensible as well as create a win-win situation for businesses and legal agencies. For more details, please see the "Newest Environmental Regulations" webpage on the EPA website (<http://w3.epa.gov.tw/epalaw/index.aspx>).

Recycling

Lead-Acid Battery Recycling and Treatment Standards Amended

The EPA has made a preannouncement of the Waste Lead-Acid Battery Recycling, Storage, Clearance, Treatment Methods and Facility Standards to avoid pollution due to inappropriate treatment. This will ensure comprehensive recycling, storage, clearance and treatment of lead-acid batteries.

The EPA strengthened the recycling and management of lead-acid batteries which are listed as mandatory recyclable hazardous waste items under the Basel Convention. Putting inspection and enforcement into practice to avoid environmental pollution and maintain environmental quality, on 15 November 2007, the EPA issued a preannouncement of draft revisions to the Waste Lead-Acid Battery Recycling, Storage, Clearance and Treatment Methods and Facility Standards (廢鉛蓄電池回收貯存清除處理方法及設施標準).

Working to regulate recycling and treatment industries involved in the recycling of lead-acid batteries, and

avoid environmental pollution due to inappropriate handling during the recycling, storage, clearance and treatment of recyclable lead batteries, the EPA promulgated the Waste Lead-Acid Battery Recycling, Storage, Clearance, and Treatment Methods and Facility Standards on 23 October 2002. This increased the comprehensiveness of lead-acid battery recycling, storage, clearance and treatment related work. Further revisions were promulgated on 16 February 2007 with reference to related regulations in the General Waste Recycling, Clearance and Treatment Methods (一般廢棄物回收清除處理辦法), the Industrial Waste Storage, Clearance, and Treatment Methods and Facility

Standards (事業廢棄物貯存清除處理方法及設施標準), and the Mandatory Recyclable Inspection Certification Operating Methods (應回收廢棄物稽核認證作業辦法). The present revision primarily strengthens the installation and management of treatment facilities by lead-acid battery treatment enterprises. The revisions specify lead-acid battery treatment companies should follow regulations on establishing groundwater quality monitoring well facilities as stated in the Groundwater Quality Monitoring Well Installation Guidelines (地下水水質監測井設置規範). Treatment plants should comply with regulations under the Water Pollution Control Act (水污染防治法), and the Soil and Groundwater Pollution Remediation Act (土壤及地下水污染整治法). Smelting facilities should install stack continuous

automatic monitoring equipment to monitor opacity, sulfur dioxide emissions, NOx, oxygen and emission rates. The handling of installation, specifications, testing and monitoring information should comply with the Stationary Pollution Source Air Pollution Continuous Automatic Monitoring Equipment Management Regulations (固定污染源空氣污染物連續自動監測設施管理辦法).

To prevent the revisions from directly impacting industries currently already undertaking lead-acid battery recycling and treatment, the Executive Process Act (行政程序法) allows enterprises six months grace period in which to make improvements. Rules for this transition are stipulated in Article 7.

Waste Management

First Foreign Firm to Enter ESTP Commences Operations

Kaohsiung County's Benjhou Industrial Park, the first of Taiwan's four Environmental Science and Technology Parks (ESTP), has welcomed its first foreign firm, US's World Resources Company, to set up operations. The firm commenced operations on 7 November 2007, serving as a pre-treatment plant to derive resources from electroplating sludge. The plant will be able to treat up to 12,000 tonnes of wastewater and sludge or up to 2,400 tonnes of copper sludge, greatly enhancing the nation's capacity for self-treatment. In the past, this sludge was exported to the US for treatment. Being able to treat and reuse this resource locally holds major significance for environmental protection in Taiwan.

The EPA has established four Environmental Science and Technology Parks (ESTP): Benjhou Industrial Park in Kaohsiung County, Fenglin Integrated Industrial Park in Hualien County, Taoyuan Technology Industrial Park in Taoyuan County, and Liuying Industrial Park in Tainan County. The Kaohsiung ESTP is already up in operation and businesses applying to enter the park need only pass through a single portal. The entire application process from submitting the application to finalization of administrative work takes only 89 working days. The World Resources Company (WRC) was the first foreign firm to enter an ESTP, choosing to locate its plant in the Kaohsiung ESTP. After over a year of planning and building, the plant is now officially in operation.

The EPA said that by 30 November 2007, already 56 firms had entered the four ESTPs and numerous other companies have already applied, including many foreign firms and non-Chinese technical cooperation firms. This trend greatly benefits the state of environmental technology in Taiwan. Currently, already many firms have completed building factories and have begun to link production chains to cycle materials and energy. The gradually emerging

ecological production cycles promise to solve Taiwan's future production related environmental problems and improve environmental technology. These advancements will set the standards for new industrial parks.

The EPA stated that WRC's commencement of operations on 7 November 2007 marked the first foreign firm to enter an ESTP. Heavy metal electroplating sludge currently generated by Taiwan's high-tech industry is exported to WRC for recycling precious metals. The company's other treatment plants are located in Arizona, Pennsylvania, and Germany. Many years ago WRC had planned to establish a plant in Asia to keep up with its expanding business. After considering many factors including costs, materials and services, the firm decided to establish a plant in the Kaohsiung ESTP. The company's plans included setting up an electroplating sludge reuse pretreatment plant which would utilize the extra heat from the nearby Kaohsiung Gangshan waste incineration plant to recycle the precious metal concentrates in sludge waste. The recycled product is then provided as a raw material to the minerals industry and metal manufacturers. The plant expects to treat 12,000 tonnes of sludge from electroplating

wastewater each year, and 2,400 tonnes of copper sludge. This will greatly increase the ratio of domestically treated materials and is expected to attract up to NT\$120 million in investments and create NT\$380 million each year.

Rising energy prices and the pressing need for waste recycling in recent years has pushed the EPA and

renewable energy companies to pick up the pace. With limited land area and lots available in Taiwan's four ESTPs, the EPA calls on interested enterprises to quickly send in their applications to enter the park. Inquiries are welcome at the ESTP firm recruitment hotline: (02) 2381-5784.

Water Quality

Samho Brother Pollution Compensation Issue Resolved

After a short period of litigation and negotiation, the EPA reached an agreement for pollution compensation from the insurer of the Samho Brother chemical tanker and issued an indictment to the court. Within a month, both sides held multiple intensive negotiations and reached a resolution on the request for compensation for administrative expenses incurred by government agencies involved in emergency response.

The Samho Brother chemical tanker was carrying 3,100 tonnes of benzene in October 2005 to the Kaohsiung Harbor. On the morning of 10 October 2005, when passing by the Yong-an fishing port of Taoyuan County, the T.S. Hong Kong cargo freighter rammed into the rear portside while passing by, which split open the cabin and allowed seawater to gush in. The ship capsized and sunk nine nautical miles off the coast of Liaoyu Harbor in Hsinchu City.

After a series of talks in August 2007, the representative insurers of the two ships notified the EPA of confirmation that the tanker's insurer, Gard P&I Club, was responsible for expenses of all negotiations. The EPA immediately requested a Gard representative to come to Taiwan for talks for the first time on 14 September 2007. To hasten an agreement between the two sides regarding expenses incurred, the EPA adopted litigation and out of court settlement methods to secure a timeline for out-of-court settlement talks.

The EPA had formerly coordinated with related agencies to confirm their expenses would be paid, and also formally asked the court to issue an

indictment for compensation. During the fifth round of talks on 18 October 2007, Gard agreed to pay NT\$48 million in administrative expenses. After informing the Swedish side of the out-of-court settlement results, court settlement papers can be signed and expenses paid.

Upon review and analysis of this case and similar cases in the past, the EPA noted that the central government and local governments' emergency response mechanism has run smoothly since the January 2001 Amorgos shipwreck causing pollution off the coast of Longkeng, Kending. The accumulated experience in handling such matters has helped shorten the compensation timeline. Although Gard was the responsible insurer for the pollution of shipowners in the 2001 Amorgos incident, the 2006 Jeanie incident and the Samho Brother incident, the out of court settlement process was different in each case. Both sides have since built up much negotiation experience and mutual trust. Not looking forward to drawn out litigation and settlement disputes this time, they managed to reach an agreement within just one month.

General Policy

Local Sustainable Development Plans Underway Nationwide in 2008

Actions at the local level are most significant in putting sustainable development into practice. With assistance from the central government, currently 13 counties have already drawn up sustainable development strategic plans. The goal is to get all 25 counties and municipalities to complete local sustainable development plans before the end of 2008.

To advance local government promotion of local sustainable development action, in 2007 the EPA

allocated a budget to assist eight counties and cities that had not yet drawn up sustainable development

plans (Hsinchu City, Hsinchu County, Miaoli County, Nantou County, Keelung City, Taitung County, Penghu County and Lianjiang County). Currently, sustainable development work is unfolding in all 25 of the nation's counties and municipalities. This will complete a vital link in Taiwan's sustainable development work.

The EPA indicated that currently already 13 counties and municipalities have completed sustainable development strategic plans and Local Agenda 21s based on local unique qualities. The majority of the leaders of these counties and municipalities are chairpersons of local sustainable development committee, and are therefore keen on integrating local human manpower and resources to comprehensively promote sustainable development. Four other counties (Taipei County, Taichung County, Yunlin County and Chiayi County) will complete sustainable development plans before the end of this year. The EPA is offering special assistance to eight other counties and

municipalities that have not yet drawn up plans.

The EPA plans to get all 25 of the nation's counties and municipalities to complete local sustainable development plans by the end of 2008. Apart from assisting each county and municipality in establishing a local sustainability assessment system, the focus of future promotion will be to ensure county and municipality level sustainable development committees can more effectively operate under this system. The system acts as the doorway to local sustainable development and provides steps to achieve sustainable development visions. In addition, a white paper on environmental sustainability is compiled to show each county/municipality's promotion of local sustainable development. The white paper helps increase citizens' awareness of the hard work and achievements made by local governments in promoting sustainable development.

Air Quality

Fee Deductions to Encourage Air Pollution Control Investment

Encouraging enterprises to install and effectively operate air pollution control equipment, the EPA has just issued a preannouncement of two draft bills that will provide deductions for enterprises that have already paid air pollution fees. The two deductions will cover the costs of purchasing and operating air pollution control equipment.

One goal of the polluter pays principle is to benefit those who improve their pollution. On 20 September 2007, the EPA issued a preannouncement of the draft Public and Private Stationary Pollution Air Pollution Control Equipment Air Pollution Control Fee Deduction Regulations (公私場所固定污染源空氣污染防制設備空氣污染防制費減免辦法). The regulations feature an incentive system and administrative control adopted in parallel to achieve optimal pollution reduction.

The EPA channels air pollution fees into a special fund for a special purpose to encourage industry to carry out air pollutant emission reductions. According to authority granted in Article 19~2 of the Air Pollution Control Act (空氣污染防制法), the EPA has drawn up draft regulations for fee deductions. Enterprises that have already paid pollution control fees for stationary pollution sources are eligible to deduct the costs of purchasing and operating air pollution control equipment.

In the future, when a company installs new air

pollution control equipment for SO_x, NO_x and VOCs, they can apply with local environmental protection bureaus (EPBs) for a deduction of air pollution fees. A maximum deduction of 30% is allowed and if existing VOC control equipment was installed from 2002 to the stated time period, they are eligible for a deduction of up to 15%.

Companies that either did not apply for a purchase cost deduction or obtained a deduction five years earlier can apply for deduction of consumed materials based on the degree of efficiency of materials used in VOC control equipment. As SO_x and NO_x deductions are already included in stationary pollution source air pollution control fee rates, a special fee rate has been set for those who have installed pollution control equipment. In this case no deduction is provided for consumed materials. The EPA has assessed that once implemented, this deduction rule will cut SO_x, NO_x and VOC emissions by up to 9,000 tonnes, 15,000 tonnes and 29,000 tonnes, respectively.

Waste Management

Reader's Digest Reports Taiwan's Waste Management Performance

The English and Chinese versions of the November 2007 issue of Reader's Digest discussed Asia's garbage crisis in depth. Taiwan's garbage policy was given high praise.

According to Reader's Digest, Asia's waste problem is almost too large to handle. Some cities spend as much as half of their annual budget on solving waste problems, and even so it is common that half of all waste is not treated effectively. In June 2007, an official of the Taiwan EPA Department of Waste Management was invited to speak in Pennsylvania. The EPA's introduction of Taiwan's environmental policy attracted the attention of Reader's Digest headquarters in Pennsylvania. After interviewing the Taiwan EPA, the magazine issued a special report in the November issue.

Referring to waste management of advanced nations, Reader's Digest indicated that Taiwan and Singapore are already adopting effective measures to vastly reduce garbage. Taiwan has experienced the problem that many other countries are now facing. Around 1987, so-called "garbage wars" erupted in Taiwan and litter could be seen everywhere. This has completely changed in modern times. Under the "Garbage Off the Ground" policy, households in Taiwan take their garbage bags to set locations in their neighborhood and wait for the garbage truck to come. The trucks broadcast classical music and appear at street corners at appointed times to collect garbage that is presorted by citizens into the three categories of food waste, general waste and recyclables. Taipei City has enacted a system whereby designated garbage

bags must be purchased, while no fee is collected for collection of recyclables. These measures have seen great achievements and from 2001, Taiwan decreased its waste generation volume by 32%. Goals have been set for the year 2020 to reduce overall waste by 75% and 85% of recyclable industrial waste.

The EPA told Reader's Digest about how these policies reflect a conceptual shift in waste management, moving from end-of-pipe treatment to source reductions and resource recycling by encouraging the public to reduce, reuse and recycle. The EPA told the Reader's Digest, "To make the three Rs work, decisive policy, effective enforcement, public awareness, continuing education and cooperation from private organisations are all essential."

If garbage is not effectively controlled, it could have an adverse impact on everyone. "Contamination does not differentiate between the richer and poorer," Reader's Digest quoted Dr. Wahid Murad, a solid waste management specialist at Multimedia University in Melaka, Malaysia, "When an environment is being polluted, everyone, regardless of his or her economic status or functions, suffers." Considering the present state of the world, it behooves each of us to pitch in. The efforts of the people of Taiwan have already been made known in a renowned international magazine, affirming Taiwan's hard work and achievements toward environmental protection in recent years.

News Briefs

Citizens Participate in 2007 World Water Monitoring Day Activities

The EPA invited all citizens to participate in the 2007 Fifth World Water Monitoring Day activities. Over 340 groups around the nation participated, for a total of 3,000 registered individuals. World Water Monitoring Day activities are jointly coordinated by the Water Environment Federation, the International Water Association, and the US EPA. Citizens of the world were invited to join in monitoring environmental water quality around their neighborhoods from 18 September to 18 October. Since Taiwan began participating in the First World Water Monitoring Day in 2003, the number of participants has grown each year. The EPA states that

the monitoring results of this activity will be compiled and sent to the World Water Monitoring Day website. The US Water Environment Federation will compare results from previous years in a 2007 World Water Monitoring Day annual report. The whole world will be able to see Taiwan's monitoring results, showing the world Taiwan's pledge to stand with the world in caring for the Earth's water resources. Related information is posted on the EPA's website for perusal: <http://www.epa.gov.tw/wwmd>.

Electric-Assist Bicycle Subsidy Extended Two More Years

Due to inflating oil prices, the EPA is encouraging energy conservation by extending subsidies to citizens to purchase electric-assist bicycles for two more years until

30 November 2009. Each person is eligible to receive subsidies for two bicycles and each bicycle will be subsidized NT\$3,000. This measure encourages citizens to use electric-assist bicycles as an alternative means of transportation. This measure addresses environmental policies to reduce pollution by offering a replacement for traditional scooters. Electric-assist bicycles are a kind of bicycle that contains a power-assist system comprising batteries and a motor. This gives it more flexibility, rigor and convenience than a regular bicycle and does not require gas and does not cause air pollution. The current price of electric-assist bicycles ranges around NT\$18,000~20,000.

GPS Applications for Tracking Transport of Pig Carcasses Awarded

This year the EPA entered an Executive Yuan annual competition among all agencies with its project on

"Applying GPS to Track the Transport of Pig Carcasses." After passing the three evaluation stages, the project earned an honorary award in computer information. The Executive Yuan held an award ceremony on 22 November 2007 in conjunction with the 2007 Legal Reformation of National Rank Medals. The EPA Department of Waste Management represented the EPA to receive the award. To effectively control the flow of industrial waste, including pig carcasses, the EPA promulgated a revision on 11 May 2006 to begin requiring the installation of GPS tracking devices on clearance vehicles of enterprises involved in the clearance and recycling of livestock carcasses. To date, 129 such vehicles have installed GPS equipment. The EPA says that the trajectory of all vehicles transporting pig carcasses is transmitted via GPS to provide instant data for the EPA's monitoring system. If a vehicle does not arrive at the farm or processing plant, their entire trajectory can be shown.

Activities

EPA Commended for Promoting ISO 20000

From April 2006, the EPA took the lead in introducing information service management standard ISO 20000 and obtained certification in February 2007. After a year of striving for thoroughness in this area the EPA was invited by ISO certifier, British Standards Institute (BSI) Taiwan branch, to its annual assembly to receive commendation for outstanding performance as an ISO 20000 certified organization. This attests to the EPA's hard work and contribution toward the information service management field. The EPA received this honor to become Taiwan's first government organization to receive this certificate. The scope includes public management system, administrative management system, intranet and knowledge management system and related computer mainframes.



▶ Minister Dang (middle) present at the forum

2007 Green Product International Conference

To increase exchange and international cooperation in promoting green consumption, the EPA held the "2007 Green Product Business Opportunity International Forum" from 13~14 November 2007. Among the 120 people in attendance included Global Ecolabelling Network chair John Polak, International Green Purchasing

Network (IGPN) Secretary General Mr. Hiromi Mori, green procurement alliances of Japan, Thailand and Malaysia, the City of Portland Bureau of Purchases, a representative of the Swedish Environmental Management Council, purchase personnel from domestic agencies, schools and enterprises, and environmental NGOs. EPA Minister Winston Dang was also present at the forum and gave a speech during the opening ceremony, pointing out that Taiwan has been promoting its Green Mark ecolabelling system since 1993. By the end of October 2007, Taiwan had already launched 99 product specification standards, ranking third in the world. Taiwan is also the first country to develop legislation promoting government green procurement. By 2006, green procurement made up 88% of spending by government agencies in categories for which green products are available. With full citizen support this has already generated economic value of over NT\$80 billion, and promises great achievements in environmental protection.

EPA Minister Dang Meets with IPCC Vice Chairman

On 5 November 2007, EPA Minister Winston Dang received Dr. Mohan Munasinghe, vice chairman of the Intergovernmental Panel on Climate Change (IPCC) to exchange experience and views on economic and environmental sustainable development. Dr. Munasinghe was invited to Taiwan to participate in the 1st International Association of Energy Economics (IAEE) Asian Conference on 5 November 2007, and gave a special topic speech at the opening ceremony as a guest of honor. Minister Dang hopes when the IPCC receives the Nobel Peace Award in Stockholm, Sweden this December, that it proclaims to the world the appeal to squarely face the international issues of increasingly frequent extreme weather events due to global climate change, greater global environmental loading and worsening pollution. Dr. Munasinghe agreed and emphasized that the impacts brought by climate change

are becoming increasingly serious. Dr. Munasinghe will convey Minister Dang's words to IPCC chairperson Mr. Rajendra Pachauri.



▶ Dr. Mohan speaking with Minister Dang

Domestic and Foreign Experts Talk on Waste Management, Treatment and Reuse Technology

From 22~23 November 2007, the EPA invited waste experts from the US and Taiwan for a series of special topic lectures in Taipei and Kaohsiung on "Domestic and Foreign Industrial Waste Management Policy, Waste Management and Recycling Technology." The purpose of this event was to increase understanding of the current state of domestic and foreign waste management and treatment and recycling technology. The EPA invited Dr. Pao-Chiang Yuan (袁保強), a professor at Jackson State University Department of Technology in Mississippi, USA, to deliver a lecture. Drawing from his many years of experience in the US researching industrial waste management, recycling and treatment technology, and landfill materials control, during the conference Dr. Yuan introduced related examples of appropriate treatment and monitoring technology at hazardous waste treatment facilities in the US. In addition, the EPA invited National Taipei Technology University Environmental Planning and Management Research Institute professor Chang Tian Jin (張添晉) to introduce the current domestic waste with potential for reuse such as mercury light bulbs, dust from steel smelting, waste lithium batteries and real applications of reusing waste lead glass.

2007 National Sustainable Development Awards Conferred

The National Council for Sustainable Development (NCSD) held the 2007 National Sustainable Development Awards ceremony on 3 December 2007 at the Executive Yuan assembly hall. Premier Chang Jun-hsiung personally handed out the awards. A decade since the NCSD's establishment, this year marks the fourth National Sustainable Development Award ceremony. The five selection categories were community sustainable development, enterprise sustainable development, education sustainable development, civil organization sustainable development and execution of sustainable development action plans. Award recipients were chosen according to a three-stage selection process. Three communities including the Chiyan Community of Beitou, Taipei City, were chosen to receive the Community Sustainable Development Award. The Corporate Sustainable Development Award was given to three companies including Asus Computers. The Education Sustainable Development Award was given to three schools including Yunhai Elementary School of Taipei County. The Niuli Community Exchange Association in Hualien County was the only group to receive the Civil Organization Sustainable Development Award. Three agencies received the Execution of Sustainable Development Action Plans Awards, including the Construction and Planning Agency of the Ministry of the Interior's Dongsha Coral National Park Plan. A total of 13 groups received awards.

EPA Launches Online English Environmental Forum

To keep Taiwan on track with international views and enhance exchange of environmental information with international observers, the EPA has launched an English interface for its environmental forum and minister's mailbox. Those interested in Taiwan's environmental protection affairs can get on the EPA website and click on "contact us" or "e-forum" to write an email to the minister, or participate in the environmental forum to express opinions or join discussions. The EPA's English website is <http://english.epa.gov.tw/en/index.aspx>. The EPA welcomes comments from people all over the world concerned with the environment.

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