



Feature Column

EPA Dioxin Control Policies and Measures

As part of the plans to install incremental controls over the years and thereby gradually reduce the amount of dioxin released in the atmosphere, medium- and small-scale waste incinerators will be listed under dioxin emissions controls from January 1, 2004. At this time all the nation's incinerators will be subject to controls and will be required to reach strict emissions standards set by the EPA, making domestic dioxin control policies more comprehensive and in accordance with actual practices.

Dioxin, known as the "toxin of the century," is one of the few confirmed carcinogenic substances known to date. Dioxin is unique in that it does not readily break down and it builds up in the environment, leading to long-term environmental accumulation. Eventually, it ends up in human bodies after cycling through the food chain, and hence poses a danger to human health.

Dioxin comes from various sources and is generated through complex processes. Finding ways to reduce dioxin emissions and prevent it from harming public health has become an important environmental protection issue that all countries must face.

As indicated by other countries' experience in dioxin controls, waste incinerators and arc furnaces for steel smelting are two major contributors of dioxin emissions. Accordingly, the EPA has not only tightened control regulations on these major pollution sources, but has also put greater efforts toward pollution inspection work.

Dioxin pollution is of a special nature due to its tendency to spread via different media in the environment, and hence dioxin controls must address a broad range of concerns. This feature column provides a comprehensive introduction to the EPA's dioxin control policies and measures, covering risk assessment and air pollution controls, as well as waste management, incinerator construction and enhanced testing capabilities.

Dioxin Assessment and Control Mechanisms

Dioxin is the by-product of combustion in several industrial processes and therefore assessing the

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There is strong public concern about incinerator dioxin emissions in Taiwan (Muzha incineration plant)

harm caused by airborne dioxin requires examining several different environmental media such as air, water, soil and food. Numerous incidents involving pesticides, heavy metals and dioxin both overseas and in Taiwan in recent years have caused panic among the public and have even threatened the livelihood of fishermen. In dealing with such issues, the Department of Health organized a cross-departmental "Environmental Pollution and Food Product Safety Coordination Committee Meeting" under the guidance of the Executive Yuan in May 2001. This meeting coordinated related governmental agencies so that when a problem arises, a cross-departmental meeting will be immediately convened to promptly and effectively handle the issue.

This cross-departmental mechanism allows for ample exchange of domestic information on dioxin pollution in the environment, food products, and human bodies, creating a platform for comprehensive controls. As for division of labor among the coordination committee, the EPA is responsible for environmental monitoring and pollution management. The main tasks involved in environmental monitoring of dioxin pollution include:

1. Managing environmental quality monitoring and establishing related information
2. Gathering relevant research data and monitoring the bottom sludge of main rivers

With regards to dioxin pollution management, the EPA has established an inventory of atmospheric dioxin pollution sources in the Taiwan region, targeting primary pollution sources already known to release dioxin emissions, such as waste incinerators, the steel industry, and metal smelters. In addition the EPA is also continuing to carry out key point inspec-

tions and tests.

Major Dioxin Emission Sources Under Control by 2004

Currently the primary pathway for dioxin exposure is through the atmosphere, where it then adheres to plant surfaces and enters the food chain. Targeting pollution sources through source management is the best way to reduce its threat to the public, and is thus the focal point of air pollution control measures. In response to the general public's alarm over dioxin, the EPA has carried out related environmental surveys in recent years to understand the degree of harm that dioxin has on human health.

estimates of dioxin pollution levels in the atmosphere in 2002, of the estimated 299.797 gI-TEQ, arc furnaces in the steel smelting industry accounted for the highest ratio of emissions at 58% with a total of 172.693 gI-TEQ. The second highest emissions volumes came from industrial waste incinerators (including medical and hazardous waste) at 17% or 49.769 gI-TEQ.

Different dioxin emission control standards have been drawn up for different industries. So far, large-scale waste incinerator standards already been fully implemented. Separate standards have already begun to be implemented in stages for small- and medium-scale incinerators; these standards are based on whether the facilities are

As of January 1, 2004, all categories of waste incinerators, including large-, medium- and small-scale incinerators will be listed under regulatory controls.

From 2000 to 2003, the EPA has carried out an environmental survey of areas adjacent to sixteen large-scale waste incinerators. The survey examines adjacent air quality, soil, vegetation, and neighboring residents' blood concentrations. Results show dioxin concentrations in various environmental media adjacent to domestic incinerators to be in the same range as those in equivalent locations in other countries.

Based on environmental distribution survey results, it is estimated that even if a large-scale waste incinerator remains in operation for twenty years, the exposure dosage of neighboring residents still complies with the WHO's recommended tolerable daily intake (TDI).

The EPA indicated that it will control national dioxin emissions in stages, hoping to reach 175.5 gI-TEQ/year by 2004, and 98.6 gI-TEQ/year by 2007. Looking at

newly built or previously existing and whether their handling capacity is above or below four tons per hour. The only remaining group of existing incinerators to be included under regulatory controls comprises those with a handling capacity of under four tons per hour. As of January 1, 2004, this group will be listed under regulatory controls, thereby bringing all small- and medium- scale waste incinerators under control.

As for steel smelting arc furnaces- the largest polluters, the newly built furnaces have already been under control since January 2002 and operators are required to reach emission standards of 0.5 ng I-TEQ/ Nm³. More time the environment is often in extremely minute concentrations, it must first undergo a high level of condensation and a complicated purification process to expel interfering substances before it is possible to test for individual components. These processes de-

mand precision technology. To satisfy domestic requirements for dioxin testing, the EPA Environmental Analysis Laboratory (EAL) established a dioxin analysis laboratory in 1995. After years of development and advancement, since 1997 this lab has participated in comparison tests between international labs. EAL received international accreditation in dioxin sampling and analysis from NATA in 2002, attesting to the objectivity of its analysis capabilities.

Incinerator Dioxin Testing Increased to Twice Per Year

Regarding the management of incinerator operations, the EPA Department of Engineering indicated that because construction timelines vary for each incinerator, the older equipment at certain incineration plants makes it harder for these plants to reach the EPA's newest standards. For example, the Neihu incineration plant showed dioxin emission concentrations of 1 ng I-TEQ/Nm³ for several years in the 1980s during random tests. However, after given time to make improvements, it now tallies with the current standard of 0.1 ng I-TEQ/Nm³. The Muzha incineration plant, also one of the older plants in Taiwan, complies with current standards as well.

The Neihu incineration plant indicated that the EPA issued standards in April 1997 requiring fly ash to be collected and stored separately from bottom ash. After new emission standards were promulgated, the plant suspended incineration operations in February 1999 to carry out improvement measures on stack gas management. Improvements were completed by the end of March 2001, after which dioxin concentration test results had already dropped below 0.1 ng I-TEQ/Nm³. Meanwhile, fly ash and bottom ash were collected, stored and

solidified for separate treatment.

Not only have standards been raised; dioxin testing frequency has also been increased. The EPA Department of Engineering explains that Article 8 of the revised *Waste Incinerator Dioxin Control and Emission Standards* (廢棄物焚化爐戴奧辛管制及排放標準), promulgated on August 20 this year, stipulates that from January 1, 2004, the frequency of scheduled testing for dioxin within stack gas will be stepped up from once to twice per year for all incinerators.

Moreover, members of environmental protection organizations and residents from the adjacent community shall participate in and oversee these tests (please see EPM Vol.VI Issue 4).

Enhancing Taiwan's Dioxin Testing Capacity

Environmental testing capacity is the supporting foundation of environmental protection. Since the presence of dioxin in the environment is often in extremely minute concentrations, it must first undergo a high level of condensation and a complicated purification process to expel interfering substances before it is possible to test for individual components. These processes demand precision technology. To satisfy domestic requirements for dioxin testing, the EPA Environmental Analysis Laboratory (EAL) established a dioxin analysis laboratory in 1995. After years of development and advancement, since 1997 this lab has participated in comparison tests between international labs. EAL received international accreditation in dioxin sampling and analysis from NATA in 2002, attesting to the objectivity of its analysis capabilities.

Wielding proficient testing capabilities, EAL is currently establishing a list of atmospheric di-

oxin pollution sources in the Taiwan region, and researching ways to improve dioxin emissions controls. The lab also monitors the background levels of dioxin in the environment over the years.

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In order to establish Taiwan's dioxin testing capacity, EAL has drawn up and announced various measures in response to environmental investigation requirements, including the *Environmental Atmospheric Dioxin Sampling and Testing Methods* (環境空氣中戴奧辛採樣及檢測方法), and the *Testing Methods for Environmental Background Levels of Dioxins and Furans* (環境基質戴奧辛及呋喃檢測方法). In addition, EAL is sharing its accumulated experience and expertise by assisting other dioxin laboratories in governmental organizations and privately operated testing organizations. EAL encourages industries to submit dioxin sampling and analysis certification, and so far ten dioxin sampling testing organizations and five dioxin analysis testing organizations have received accreditation to assist the government and private groups administer related tests and establish analysis systems and technology.

Please note the following correction to last month's EPM:

Page 1: "doctorate degree in construction" should actually be "doctorate degree in civil engineering"

General Policy

Chang: Environmental Education Is Cornerstone of EPA Work

During a handover ceremony just days ago to appoint Chang Juu-en as EPA Administrator, Chang expressed hopes for the EPA to focus on three primary aims in the future: environmental education, environmental coordination, and pollution prevention incentives. Chang stressed that environmental protection work is one of the greatest and far reaching undertakings of sustainable development, and is not just another task, but rather is a mission of paramount importance.

The EPA held an inauguration ceremony to pronounce Chang Juu-en (張祖恩) as the new EPA Administrator on November 11. Minister of State Yeh Jiunn-rong (葉俊榮) presided over the ceremony, warmly praising Administrator Chang's rich professional background, and attesting to his colleagues' affirmation of his ability to administer and coordinate environmental protection affairs.

During his speech, Yeh told the story of Chang Juu-en's beginnings as an inspector at a local agency, after which he studied overseas to earn his doctorate degree in construction. Upon returning to Taiwan, Chang taught at National Cheng Kung University and served on the EPA Department of Planning. In both the academic world and the field of environmental protection affairs, Chang has demonstrated exceptional capability. Yeh especially praised Chang for his ability to handle affairs in a circumspect manner, attend to his work with great earnest, and conduct himself with the utmost sincerity. Under such guidance, the EPA is sure to uphold its record of excellent performance.

After Yeh handed over the official seal of the EPA Administrator, Chang spoke on the future direction of environmental protection work, expressing hopes that the EPA will focus on developments in three main areas. The first priority

is to promote environmental education. Chang believes that environmental education is the cornerstone of environmental protection work and that it is imperative to instill environmental protection concepts and environmental ethics into people's lives, education and work if Taiwan is to restore the high quality environment that it once knew. All related parties should actively engage in legislative work of the *Environmental Education Act* (環境教育法) to systematically incorporate environmental education into school education and social education. This act is the key to laying down solid groundwork for the monumental undertaking of environmental protection for years to come.

The second priority is environmental coordination. Administra-

tor Chang believes that we must maintain harmony, balance and stability if we are to realize the essence of ecologically sustainable development. In other words, environmental protection work must become an inherent discipline among all fields, seeking coordination between politics, legislation, economics and public opinion. In the future, the EPA will endeavor to coordinate and complement all relevant systems, seeking the greatest common denominator to reconcile opposing sides, build social harmony and work toward the greatest benefit for all people.

The third priority is to make the best use of pollution prevention incentives. This entails that policies should align with mainstream international environmental protection practices and should advance the establishment of helpful guiding functions for environmental protection work. Based on the current foundation of environmental protection public rights, pollution prevention incentives can create win-win situations by treating with preference those parties who abide by the law of their own accord by adopting best available technology or environmentally friendly measures. Through such initiatives Taiwan has great potential to become an environmental high-tech innovation base and exporter, and



Administrator Chang receives the official EPA seal from Minister of State Yeh Jiunn-rong.

contribute to the sustainable development of the ecosystem.

Administrator Chang's closing words emphasized that those working in environmental protection have no reason for pessimism because all efforts will bring us one step closer to sustainable development for the benefit of future generations. For Chang, his work with the EPA is not merely a job, but is rather a mission that he

promises to carry out together with others with the greatest sincerity, patience and determination. Chang expressed hope that all walks of life give more support and encouragement to the EPA to let environmental protection work achieve change with each passing day, and join in the EPA's anticipation of fulfilling a vision of everlasting blue skies, green land, verdant mountains and pristine water as soon as possible.

will be upheld in the future. However, the public holds certain criticisms of some of the implementation problems such as waste of resources due to the difficulty of reusing the thicker bags now sold by smaller food and beverage vendors whose products often leave a greasy residue on the bags. Another problem is that the disposable lunch boxes sold in convenience chain stores are not subject to the restriction policy, resulting in unfair policy. Furthermore, some also point out that it is not necessarily more environmentally friendly to only place restrictions on plastics and not paper products.

Waste Management

EPA to Revise Plastics Restriction Policy Before Yearend

The second stage of the restricted use policy on plastic bags and tableware has been underway for a year. Although statistics show successful reductions in the number of plastic bags, it has been quite difficult to implement the policy for small food and beverage vendors. Due to feedback from the private sector that the restricted use policy should be appropriately adjusted, the EPA has promised to make revisions to the policy before the end of 2003 at the soonest.

The EPA began promoting the second stage of the Restricted Use Policy on Plastic Shopping Bags and Plastic (or Polystyrene) Disposable Tableware (購物用塑膠袋及塑膠類(含保麗龍)免洗餐具限制使用政策) since January 2003 to reduce the usage of these items. Targeted businesses include department stores, shopping centers, retail mega stores, supermarkets, convenience chain stores, fast food chain stores and storefront food and beverage shops that provide customer seating.

At the end of this June, the EPA carried out a survey analysis of the amounts of shopping bags and disposable tableware used among all the targeted businesses. Results revealed that since the policy has taken effect, there has been nearly an 80% reduction in the amount of plastic shopping bags. Taking into account the fact that paper bags are being used in place

of plastic, the total decrease in numbers of shopping bags is posted at around 73%. The amount of disposable plastic tableware has decreased by 96%. Most of this has been replaced with disposable paper tableware. Accounting for this trend, the total decrease in disposable dishware is about 27%. In addition, the ratio of people who now bring their own shopping bags has increased from below 20% before the policy took effect to 79% at the time of the survey. Such statistics show that people's consumer habits have indeed changed as a result of the policy.

The EPA indicated that the restricted use policy has in fact achieved the desired outcome of reduced usage of plastic bags and tableware. Moreover the policy has gradually changed the public's consumer habits. From an overall stance, the policy has already attained its objectives and therefore

The EPA expressed that among the six major industries subject to the restriction policy, small food and beverage vendors have shown less than ideal results in terms of curbing usage of shopping bags and disposable dishware. In response to the reactions of the citizenry and related industries, the EPA is currently evaluating the policy and before the end of the year, plans to compile related information and propose certain revisions. These new ideas will be put forward and negotiated with related parties before they are drawn up as official revisions.

News Brief

Agricultural Renewable Resources Management Regulations Enacted

On November 14, the EPA and the Council of Agriculture jointly promulgated the *Regulations Governing the Reuse of Agricultural Renewable Resources* (農業再生資源再生利用管理辦法) according to stipulations in the *Resources Reuse and Recycling Act* (資源回收再利用法). In the future, the clearance and storage of those materials announced and approved by the COA as renewable resources, as well as related facilities and record keeping methods, must all comply with the stipulations in this regulation.

The EPA emphasizes that no modifications have been made concerning the implementation direction of the restricted use policy. Inspection work has not slackened whatsoever and will continue to be carried out as usual. The EPA will strengthen

communication with the Legislative Yuan and will expedite the revision process to reduce penalty fines in the modified draft of Article 51 of the *Waste Clearance and Disposal Act* (廢棄物清理法) so as to facilitate implementation.

frame will be fined each time discovered thereafter, and if necessary, their permits will be revoked.

Regarding the transitional period after the *Regulations Governing Car Noise Testing* take effect, applicants who have been granted a stamp of authentication before the issuing date should apply to the central competent authority to renew the permit stamp within six months from the issuing date (November 5, 2003) of this regulation. Otherwise the original stamp will become ineffective.

For more information, please call 02-2311-7722 ext. 2790.

Noise Control

Car Noise Testing Regulations Issued

The EPA recently promulgated the *Regulations Governing Car Noise Testing*, aiming to raise the stature of legislation and provide legal backing for administering penalties in the area of car noise testing in the future.

In cooperation with revised articles in the *Noise Pollution Control Act* (噪音管制法), which were promulgated in January this year, the EPA drafted the *Regulations Governing Car Noise Testing* (汽車噪音檢驗處理辦法), in accordance with Article 9~1 of the Act. Containing a total of 16 articles, the new regulations were submitted to the Ministry of Transportation and Communications (MOTC) on November 5 for promulgation.

The EPA indicated that recommendations from the MOTC were referred to during the drafting of the *Regulations Governing Car Noise Testing*. Most of the car noise control testing procedures in the new regulations are similar to the existing ones as regards guidelines on noise testing and applications for testing vehicle noise controls. However, procedures for handing out penalties for noise pollution control violations are more clear-cut in the new regulations.

The new regulations clearly state guidelines for suspending the noise testing certification applications of new cars that fail to comply with *Regulations for Issuing (Renewing) and Revoking Permits for New Car Noise Testing*

Permits and Administering Random Tests (汽車新車型噪音審驗合格證明核(換)發廢止及抽驗辦法) when undergoing quality control testing and random testing.

The new regulations clearly state that according to the *Regulations for Issuing (Renewing) and Revoking Permits for New Car Noise Testing Permits and Administering Random Tests*, for new cars that fail random testing and have their permits revoked, the EPA should notify the road and traffic authority to terminate issuance of licenses for those whose test permits have not received a stamp of authentication.

In regards to penalties, according to Article 4 of the *Regulations Governing Car Noise Testing*, parties who were granted permits or test reports for import cars or passenger cars over 3,500kg should apply for a stamp of authentication in accordance to the rules stated in the guidelines. Parties who fail to comply with the regulations will need to correct their error or make improvements within a given time frame and pay a fine between NT\$10,000 and NT\$100,000 according to Article 19~1 of the *Air Pollution Control Act*. Parties who fail to make improvements during the given time

Waste Management

Tightened Inspections on Illegal Dumping of Hazardous Solvents

In recent years, the EPA has discovered two consecutive cases of illegal dumping of hazardous solvents by illegitimately entrusted disposal enterprises, resulting in serious pollution of the environment. The EPA has resolved to begin enforcing key point inspections of clearance and disposal enterprises that handle over 100 tons of waste per year starting from November 26, aiming to call a halt on illegal dumping practices.

According to the EPA's data, domestic industry generates 89,694 tons of waste solvents every year, 38.3% of which is classified as hazardous solvents, which predominantly come from 565 companies in Taiwan. A total of 32,299 tons of waste solvents are entrusted to clearance and disposal

enterprises for disposal. This figure accounts for 36% of all reported industrial waste solvents, revealing that entrustment to such enterprises is the main channel for disposal of the nation's waste solvents.

However, a small number of deceitful disposal enterprises still choose to profiteer through illegal dumping of waste materials. The EPA indicated that since mid-October this year, environmental protection agencies have discovered two cases of illegal dumping of solvents at a waste processing plant in NanZhuang Township, Miaoli County and near the Baoshan Reservoir in Hsinchu. A combined total of over one thousand barrels of waste liquid was discarded at these locations. After days of tracking, the industries, clearance enterprises and land-owners involved were penalized for violating the *Waste Clearance and Disposal Act* (廢棄物清理法). The local court prosecutors were asked to continue the inspections and prosecute those parties liable for criminal actions.

EPA Administrator Chang Juu-en indicated that an inspection clampdown will be launched from November 26, with the first stage zeroing in on 70 business groups that generate over 100 tons of waste per year, in addition to 29 clearance and disposal enterprises and 12 reuse organizations. The inspections will examine the disposal process and the flow of hazardous waste at these enterprises. According to the *Waste Clearance and Disposal Act*, businesses and entrusted clearance and disposal organizations are obligated to properly handle their own waste.

The second stage of investigations targets 80 businesses that generate 30 to 80 tons of waste per year and 14 enterprises that are entrusted to clear and dispose of or reuse waste. The EPA indicated

that arbitrary dumping of hazardous industrial waste could result in between one and five years imprisonment and fines up to NT\$3 million for any other parties implicated in the misdeed. The seriousness of this crime is illustrated by an incident in 2000 in which a deceitful company arbitrarily dumped hazardous solvents near the Chishan River (旗山溪), jeopardizing the water quality of the drinking water source for nearly one million citizens in the Greater Kaohsiung area.

The EPA has reemphasized that control implementation plans set

forth by the recently established Special Committee on Tracking and Inspection of Industrial Waste Flow (事業廢棄物流向追蹤及查核專案小組) will intensify inspections of waste solvent disposal enterprises in the near future and if necessary will make on the spot inspections. Frequent inspections and heavy penalties will ensure that companies dispose of waste through legal means, and are expected to help put a full-scale stop to environmental protection violations.

For more information, please call 02-2311-7722 ext. 2630.

Water Quality

Effluent Standards Revised

On November 26 the EPA announced revisions to articles in the *Effluent Standards*, specifically targeting the livestock industry and currieries. The chemical oxygen demand for the livestock industry will be raised from the current level of 250 mg/l to 600 mg/l. Meanwhile, currieries have been divided into three categories based on the different procedures used; each of which is subject to different application standards.

The protection of drinking water involves not only pollution remediation work, but also relies heavily on source management. Control work to determine whether wastewater discharges conform with effluent standards must take into account the fact that different industries are subject to different standards. Stemming from complaints in the private sector that regulations are overly stringent, in recent years the Council of Agriculture (COA) and pig farm organizations have also grown concerned that livestock industry effluent standards may indeed be too strict. They have therefore requested the EPA to review effluent standards for pig raising operations.

On November 26 the EPA announced revisions to Article 2 of the *Effluent Standards* (放流水標準), making modifications in

two main areas. In addition to modifying livestock effluent standards, this revision drafted different effluent standards for currieries based on the actual requirements of different manufacturing processes. Three different application standards were drawn up for leather products manufactured from rawhide, leather products manufactured from wet blue leather, and leather products that are made from neither rawhide nor wet blue leather.

The area of greatest public concern is livestock effluent standards, which has an impact on over 6,000 pig raisers. In adhering to the principle of fairness and objectivity in protecting the environment, the EPA carried out nearly one year of reviews and assessments of treatment technology at pig raising operations. It was found that during normal

operations, the COA provides assistance in establishing three-stage wastewater treatment facilities, which ensure that pig raisers maintain acceptable water quality. This provided the basis for adjusting the chemical oxygen demand (COD) to 600 mg/l from the current level of 250 mg/l. As for biological oxygen demand (BOD) and suspended solids, treatment technology for these two types of pollution is fairly simple; therefore no adjustments will be made and the current respective levels of 80 mg/l and 150 mg/l will be retained.

There are separate effluent standards for each of two categories of livestock industries, and the newly revised standards only apply

to the first category of livestock industries, which includes non-grazing animals such as pigs, chickens, ducks and geese. The dissolvable organic matter content of effluent from this industry is quite high, and therefore not as easy to process. In light of practical implementation difficulties for the livestock industry, this situation was evaluated over a period of time and recommended standards by research agencies (COD between 400 and 600mg/l) were referred to before it was decided to adjust the COD standard from the current level of 250mg/l to that of 600mg/l.

For more information, please call 02-2311-7722 ext. 2820.

chemical companies. This goes to show that with determination, even potentially high-polluting industries can set models for environmental protection.

The EPA indicated that the winning enterprises in this round of awards first underwent a preliminary selection by the selection committee members. On-site visits were then made to each establishment, where candidates were carefully reexamined and chosen to receive the awards. The ten enterprises to receive the Twelfth Annual EEP Award were Taiwan Power Company Taichung Power Station, Macronix International Co., Ltd., DuPont Taiwan Ltd. – Kuan Yin Plant, Kuozui Motors Kuan Yin Plant, Ltd., Taiwan Semiconductor Manufacturing Company, Ltd. Fab 7, China Steel Corporation Utilities Department, Ford Lio Ho Motor Co., Ltd., United Microelectronics Corp. Fab 8E, Winbond Electronics Corp., and BaLi Refuse Incineration Plant. The EPA bestowed the above enterprises with the EEP award plaque and additionally conferred Distinguished Honor Award trophies to Taiwan Power Company Taichung Power Station and Winbond Electronics Corp. to congratulate them for winning the EEP award for three consecutive years (2001, 2002 and 2003).

The selection criteria for the

General Policy

Taipower and Winbond Receive EEP Awards Three Years in a Row

The EPA held an awarding ceremony for the Twelfth Annual Enterprises Environmental Protection (EEP) Award of the Republic of China on November 28. Ten enterprises received the award this year. Taiwan Power Company (Taichung Power Station) and Winbond Electronics Corporation (Fab2) also won Distinguished Honor Awards for earning EEP Awards for three consecutive years.

The Annual Enterprises Environmental Protection (EEP) Award of the Republic of China was established in 1992 primarily as a way of encouraging and commending domestic enterprises for their outstanding performance in promoting environmental protection work. The award has helped to establish models for various different industries to promote environmental protection, while at the same time has provided opportunities for businesses within the same industry to learn from each other. The EEP Awards have been held for twelve years so far, each year choosing enterprises with good environmental protection performance. So far, already 130 companies from various different industry sectors have been

granted the award, including companies from what are commonly considered potentially high polluting traditional industries such as paper manufacturers and petro-



President Chen Shui-bian and EPA Administrator Chang Juu-en (third from right) congratulate this year's top ten EEP award winners.

Twelfth Annual EEP Award included five items: (1) environmental protection planning and management, (2) waste minimization and resource recovery, (3) performance of production process pollution control and end of pipe treatment, (4) solid waste treatment and final disposal, and (5) promotion of public awareness of environmental protection.

In addition to holding this awarding ceremony, the EPA also arranged for representatives from the winning enterprises to meet with President Chen before the

awarding ceremony. In addition, the EPA will post the outstanding performance achievements of the winning companies on its website (<http://www.epa.gov.tw/k/excel/excel.htm>) and has published the "Summary of Excellent Performance in Environmental Protection by the 12th Annual EEP Award Winners," for the public to peruse. Registration for the Thirteenth Annual EEP Awards will begin in mid-March 2004 and the EPA welcomes the eager participation of enterprises with outstanding performance in environmental protection.

prises as a purchasing standard when purchasing products.

Taiwan has had brilliant success in promoting the "Energy Star" mark. Last year Taiwan posted an overall energy savings of 14kWh or about NT\$4.6 billion. This energy savings can also be measured in terms of CO₂ emission reductions, with a total annual decrease of 930,000 tons, equivalent to 420,000 acres of forest, or the total CO₂ emissions of 200,000 cars in one year. By promoting this program, Taiwan not only receives substantial benefits through CO₂ reductions, but also increases opportunities to establish partnerships with other countries.

The energy-saving qualities of "Energy Star" mark products have almost become international standards. The right to use the "Energy Star" mark has be-

Eco-labeling

Wide Use of "Energy Star" Products in Taiwan

The U.S. "Energy Star" mark is gradually drawing attention and being promoted internationally. Taiwan has been promoting the "Energy Star" mark for four and a half years and so far results have been very successful. Currently, among all office-related electronic products possessing the "Energy Star" mark, multi-function office machines comprise the highest percentage at 94.5%.

The "Energy Star" mark has been jointly promoted by the U.S. EPA and Department of Energy since 1992, along with the cooperation of manufacturers, retailers, and enterprises. Energy saving products are promoted through a voluntary corporate greenhouse gas reduction cooperation program by means of the "Energy Star" mark system in order to change public energy consumption and to promote energy conservation and reduction of greenhouse gas emissions from power generation.

"Energy Star" has become an international energy saving symbol, with many countries including the U.S., Canada, Europe, Australia, New Zealand, Japan and Taiwan participating in this global cooperation program. Taiwan's EPA signed the "Energy Star Exchange Contract" with the U. S. in July 1999, and was authorized by the U.S. EPA to use the

label and manage any related business regarding the "Energy Star" mark in Taiwan. The system has been introduced throughout Taiwan since then and was first promoted for office equipment, such as computers, monitors, fax machines, printers, copy machines, scanners and multi-functional devices.

The EPA has recently completed a survey on the usage rate of the "Energy Star" mark in Taiwan. Survey results showed that 34.5% of desk-top computers used the mark, as well as 43.2% of lap-top computers, 88.1% of monitors, 66.4% of printers, 69.5% of scanners, 22.5% of fax machines, 44.2% of copy machines and 94.7% of multi-functional office machines. These results reveal that the "Energy Star" mark is slowly taking over the position of voluntary or compulsory labeling systems in other countries. It has also been adapted by many large international enter-

Activity

Two Briefings Held on ESTPs

Two briefings on the Environmental Science and Technology Parks (ESTPs) were held in Taipei and Kaohsiung on November 17 and 18, 2003 to invite firms to set up in the parks. The EPA entrusted the Industrial Technology Research Institute's Environmental Safety Center to hold a briefing for both the Kaohsiung County and Hualien County ESTPs. Among the 128 organizations in attendance included environmental technology and equipment manufacturers, renewable energy technology and equipment manufacturers, renewable resources reuse industries, Green Mark enterprises, related societies and representatives of foreign organizations in Taiwan. A total of 96 of those organizations in attendance were environmental protection related industries, and 13 organizations expressed willingness to enter the large science and technology parks in southern and eastern Taiwan. Most of these were interested in investing in the southern ESTP.

come much like a pass that decides whether a product can be marketed internationally or not. Taking monitors as an example, the newest specifications drawn up by the U.S. EPA are much stricter than the current ones. If these specifications had been announced as scheduled in December 2003, most CRT

monitors would not qualify for export to the U.S., and only LCD monitors would have a good chance at passing. This would have a severe impact on CRT manufacturers in Taiwan. The EPA thus urgently calls manufacturers to be prepared to react quickly to changing trends.

lated to protection of the ozone layer.

The Montreal Protocol was passed in 1987 and went into effect in 1989. It has been ratified by 184 countries so far. A total of 45 resolutions were passed during this November's meeting in Nairobi. Regarding issues that hold more relevance to Taiwan's situation, during the meeting our delegation explained Taiwan's response strategies to the conference and proposed plans and a direction for the future.

In terms of controlling methyl bromide, Taiwan has already prohibited the sale and use of methyl bromide for agricultural purposes. Moreover, the *Regulations Governing Methyl Bromide* (溴化甲烷管理辦法) promulgated this year by the EPA have limited its use to quarantine and pre-shipping applications. As a result, Taiwan is already ahead of schedule in achieving the objective for developed countries to drop to zero consumption by 2005.

As for managing the use of halons in civil aviation transport, the EPA has been carrying out an extensive inventory on halons for several years and already has sufficient command over numerous sources of used halon agents. There is already an adequate amount of these sources to supply the needs of domestic civil aviation logistics. The EPA is currently determining the scope of applications for which halons are essential and plans to establish an organization for the sole purpose of managing halons.

As for final disposal of ozone depleting substances, Taiwan's ODS production and export controls are already in step with developed countries, and a standard currently exists requiring CFCs to be recycled upon disposal of discarded cars and electronic appliances. However, the exorbitant costs of destroying CFCs both in Taiwan and abroad continues to influence

Air Quality

Halon Management Mechanism to Be Established

Days ago, a Taiwan delegation participated in the Fifteenth Meeting of the Parties to the Montreal Protocol and declared Taiwan's response initiatives regarding a resolution discussed in the conference. On the one hand, the EPA has proposed to establish an organization specifically for the purpose of managing halons. On the other hand, the EPA will earmark funds to deal with discarded refrigerants and plan investigations of emission volumes and usage amounts of substitute products for ozone depleting substances (ODS).

The Fifteenth Meeting of the Parties to the Montreal Protocol (MOP-15) was held from November 10 to 14 in Nairobi, Kenya at the Gigiri Complex, headquarters of the United Nations Environment Programme (UNEP). Over 500 representatives from a total of 123 countries participated in the conference. Taiwan attended according to protocol under the name of the Industrial Technology Research Institute (ITRI) as an NGO. The six-member delegation included members from the Ministry

of Foreign Affairs, the EPA and ITRI.

Key point issues of this year's conference included implications of entry into force of the Beijing Amendment, nominations of ODS exemptions, modifications made to the report deadline for data on annual ODS consumption levels, regulations on the use of halons in new civil airframes, and the status of destruction technologies for ODS and code of good housekeeping as well as other environmental issues re-

News Brief

Subsidies for Low-Polluting Motorcycles Extended Two Years

On November 26, the EPA promulgated revisions to related regulations stipulating that all citizens in possession of defunct motorcycles should complete procedures to declare their old motorcycles no longer usable and that they should be recycled. Citizens can also take advantage of this opportunity by applying to purchase a new low polluting fuel injection engine motorcycle approved for subsidization

by the EPA. A subsidy of NT\$4,000 is available for each motorcycle. For those who prefer to purchase an electric-assist bicycle instead, a subsidy of NT\$3,000 is available for models approved for subsidization by the EPA. The subsidization period will be extended for two more years to November 30, 2005, as the latest possible date shown on the purchase receipt. Applications for subsidization must be submitted before December 31, 2005. For more information, please call 02-2311-7722 ext. 2788.

the private sectors' willingness to recycle. The EPA plans to draw funds from the Air Pollution Control Fund in the future to handle investigations into the amounts of CFC refrigerants and the related problems with its disposal.

As for controls on the illegal trade of ODS, since 1993, Taiwan has placed great effort on inspecting and seizing smuggled CFCs and has drafted a clause in the *Air Pollution Control Act* (空污法) to indicate smuggling penalties. In the future, the EPA will progressively review and modify ODS compound tax regulation serial numbers and increase effectiveness in managing imports. Furthermore, the EPA will compile all of Taiwan's achievements and experience in inspecting and seizing smuggled CFCs over the years in response to the Montreal Protocol Secretariat's requests for Taiwan to take the initiative to share implementation achievements and show its efforts and outcomes in the battle against ODS smuggling.

As for protecting the Earth's atmosphere, the Protocol's Technology and Economic Assessment Panel expressed that promoting the use of ODS substitute products (such as HFCs and PFCs) will lead to an increase in energy consumption and greenhouse gas emissions. Taiwan is currently carrying out a survey of the use and emission amounts of substitute products. In the future, the EPA plans to integrate related domestic industries to jointly promote reasonable usage, effective management and emissions reductions.

Regarding related trade issues, the WTO requires that negotiations on multilateral environmental agreements (MEAs) are completed before 2005 and has proclaimed in writing those standard trade restriction clauses within international environmental protection treaties, using the Montreal Protocol as the most befitting example.

Therefore the primary focus of work in the future will be to maintain international trade liberalization for domestic ODS related

industries, while waiting for breakthrough opportunities to seek participation in international agreements.

Waste Management

95% of Public Supports Recycling at Fast Food Restaurants

The results have come out for the second public opinion survey on environmental protection policies this year, revealing that 95% of citizens support the policy that requires fast food chain stores to recycle resources. Moreover, 75% of the public said that they would prefer to purchase products that have the Green Mark label.

The EPA has entrusted a private agency to carry out the second public opinion survey on environmental protection policies this year. The survey, taken in September, was based on specific environmental policies this year, mainly soliciting public opinion of each environmental policy and the status of the public's use of environmental protection information. Questions covered broad topics such as, "opinions on requiring fast food chain stores to install recycling facilities in their restaurants," "opinions on industrial waste disposal," "willingness to purchase Green Mark products," "opinions toward regular inspections of motorcycle exhaust," "willingness to participate in the 'Peaceful and Beautiful Homeland' activity," and "usage of the EPA website."

The EPA has highlighted some of the important outcomes of this survey. For example, in the area of environmental information, 21% of those surveyed regarded air quality and noise control as the most important environmental information, followed by waste management (17% of those surveyed), water protection (15%) and environmental education (10%). This identifies the degree of exposure of information on the EPA website and can be referenced when making improvements to the environmental information

system.

As for the degree of acceptance that Green Mark products have been met with, survey results showed that 92% of those surveyed are already familiar with some Green Mark products, and most of these citizens (81%) expressed that they would prefer consuming products with the Green Mark label. Therefore a majority of those who are familiar with the Green Mark prefer to purchase Green Mark products, attesting to a wide public acceptance of the Green Mark system and its products.

As for the policy that went into effect in July requiring fast food chain stores to install recycling containers in their restaurants, an overwhelming 95% of those surveyed indicated support for this policy. Among those surveyed who said they had eaten in a fast food restaurant within one month, 70% said that they always cooperate in sorting recyclables when done with their meal. This indicates not only a high level of public support for this policy, but also a willingness to put their words into practice.

When asked their opinion on who should be responsible for industrial waste disposal issues, 51% of the public said that the government and industry should take joint

