

# Environmental Policy Monthly



Taiwan R.O.C.

Volume IV, Issue 5 (Published Monthly)

May 2001

Environmental Protection Administration

GPN: 2008600068

## *Feature Article*

### ***In Celebration of Earth Day President Chen Rides Bicycle to Work ..... 6***

To commemorate Earth Day, President Chen Shui-Bian decided to ride a bicycle to work, accompanied by EPA Administrator Lung-Bin Hau. On the previous day President Chen also met with a group of distinguished volunteers. During the meeting, the President restated his vision of making Taiwan a Green Silicon Island, but pointed out that the focus was on “green” and not on a silicon island.

### ***Draft Groundwater Monitoring and Control Standard Released ..... 2***

The standard is divided into two water classifications, with nearly a ten-fold difference between pollution values specified in the two. Monitoring values are set at 1/2 the control standard.

### ***Emergency Response Plan for Severe Marine Oil Spills Approved ..... 2***

On April 10 the Executive Yuan approved an emergency response plan which clarifies notification, monitoring, and cleanup responsibilities in the event of a severe marine pollution incident.

### ***Regulations for Soil Fund Fee Rates Drafted .. 3***

The draft stipulates that fee rates will be set for designated chemical substances based on toxicity, pollution potential and economic considerations. A total of NT\$30 billion will be raised for the Soil Fund at which point further collection will cease.

### ***Dioxin Standard for Steel Furnaces to be Announced in July ..... 4***

Recent EPA study results show that dioxin emissions tend to be high from certain steel smelting furnaces. For this reason the EPA has proposed a draft steel smelting furnace dioxin control standard.

### ***No Change in Policy for Gas Pump Vapor Recapturing Equipment ..... 5***

The EPA will require new gas stations to install vapor recapturing equipment on fuel-pump nozzles and devise a national testing method for such equipment.

### ***Administrator Hau Joins Earth Day Luncheon to Discuss New Policy Plans for EPA ..... 6***

Administrator Hau recently spoke at a luncheon organized by the foreign business community to celebrate Earth Day. During his speech the Admin-

istrator talked about construction of industrial waste disposal facilities and the “environmental mafia.”

### ***Professor Juu-En Chang Appointed EPA Deputy Administrator ..... 8***

The Executive Yuan recently approved Administrator Hau’s decision to appoint Juu-En Chang as EPA Deputy Administrator. Professor Chang is currently a Vice Dean at Nat’l Cheng Kung University.

### ***Draft of Resource Recycling Act Announced .. 8***

The EPA draft proposes incentives to assist recycling enterprises and will increase control measures on over-packaging.

### ***Administrator Hau Identifies Three Major Policy Points in Response to Public Opinion Poll ..... 9***

Administrator Hau recently thanked the public for its support, and stated that his future policy program will emphasize public education, pollution prevention, and strict enforcement of environmental regulations.

### ***Recycling of Fluorescent Light Tubes to Begin in 2002 ..... 10***

Given recent technology advances, the EPA announced in April that manufacturers must begin recycling straight fluorescent light tubes by Jan. 2002.

### ***Scope of Vendors Required to Install Recycling Facilities Expanded ..... 11***

Targeted firms will also be required to clearly display recycling facilities and register with the relevant environmental agency within a specified time limit.

### ***News Briefs ..... 11***

#### ***Environmental Police Force to be Expanded .. 12***

Since inception in July 1999, the Environmental Protection Police have brought 390 environmental cases to justice and prosecuted 1,189 individuals.

## Draft Groundwater Monitoring and Control Standard Released

The *Soil and Groundwater Pollution Remediation Act* contains both monitoring and control mechanisms to guide the actions of environmental agencies. The EPA recently announced a draft *Groundwater Pollution Control and Monitoring Standard*, which will form the future basis for operation of these two mechanisms. Based on health risk, the future standard is divided into two classifications depending on whether or not the water is used for drinking. There is nearly a ten-fold difference between pollution values specified in the two different classes. The baseline monitoring values are set at 1/2 the control standard value.

According to regulations in the *Soil and Groundwater Pollution Remediation Act*, baseline pollution values must be set, which, once reached, trigger mandatory monitoring by environmental agencies. Monitoring results should then be made public. If pollution levels further exceed prescribed control standards then the environmental agency must take necessary measures to prevent any worsening of the situation.

Based on these regulations, on April 4 the EPA released a draft *Groundwater Pollution Control and Monitoring Standard* (地下水污染管制標準及監測基準) which will be used as the basis for activation of monitoring and control measures taken by environmental agencies. In addition, on May 11 the EPA convened a meeting of related environmental agencies and government departments to further revise the draft.


The EPA stated that the draft standard was

formulated based on similar foreign standards, drinking water, human health, and health risk standards. The standard classifies polluted areas based on the degree of protection afforded to the water in question, divided into type I (drinking water) and type II (non-drinking water) areas. There is a tenfold difference between the pollutant concentrations that are prescribed as control standards in the two different classifications. The control items, and monitoring and control standards will be implemented in three phases.

In certain cases high concentrations of groundwater pollutants are not caused by human action. For this reason the standard specifically states that in cases where the natural background level of pollution exceeds the monitoring or control values the standard does not apply.

In terms of types of pollutants, the control standard is divided into three categories, organic compounds, heavy metals and general pollutants. In total there are 122 items included in these three categories, of which 105 are organic compounds, 14 are heavy metals, and 3 are general pollutants.

The monitoring standard also has two classifications for polluted groundwater and contains pollutants similar to the control standard. The monitoring values are set at 1/2 of the control value.

The EPA welcomes all interested parties to offer their input on the draft standards so that it can speedily complete their revision. 

## Emergency Response Plan for Severe Marine Oil Spills Approved

On April 10 the Executive Yuan approved the *Emergency Response Plan for Severe Marine Oil Pollution*. The plan clarifies notification, monitoring, and cleanup responsibilities in the event of a severe marine pollution incident. The EPA is pursuing NT\$180 million in funding for equipment and machines necessary to implement the plan.

Since the oil spill caused by the Greek tanker MV Amorgos, government agencies have been busy pursuing compensation and setting about restoration work. While undertaking these efforts the EPA has also worked to formulate the *Emergency Response Plan for Severe Marine Oil Pollution* (重大海洋油污染緊急應變計畫) in the shortest time possible. The plan sets out a definition for severe marine pollution incidents, establishes a notification system, working procedures, and a monitoring and command structure. After receiving

Executive Yuan approval on April 10, the plan became the basis for mobilizing future government agencies to respond in the event of a severe marine pollution incident.

The *Marine Pollution Control Act* requires the EPA to formulate such an emergency response plan to prevent, remove, and reduce the effects of severe marine pollution incidents to human health, the environment and property. The plan is then to guide government agency communications, monitoring, and cleanup actions in the case of a severe marine pollution incident. It is also intended to provide a way to integrate government, industry and social resources for a safe, timely and effective joint-response.


According to the plan confirmed by the Executive Yuan, there are three defined types of severe marine oil pollution incidents: (1) leakage or sus-

pected leakage of oil from an accident involving an oil tanker; (2) leakage of a ship's cargo or oil resulting from a marine disaster or other incident and that is suspected of posing a threat to human health or of severe environmental pollution; (3) any oil emission that causes serious pollution to the marine environment. The plan also stipulates that similar measures as contained in the plan will be used to deal with severe marine environmental emergencies other than oil pollution incidents.

In terms of incident notification, the emergency response plan states that after related government agencies learn of an oil pollution incident they must immediately provide all relevant information in a notification to the EPA and the Coast Guard Administration. After receiving notification, the EPA will judge whether or not the incident classifies as a severe marine oil pollution emergency. If it does, the EPA must immediately convene the Executive Yuan Severe Marine Oil Pollution Incident Response Taskforce, and according to the emergency response plan establish a Severe Marine Pollution Emergency Response Center.

The plan clearly defines responsibilities for monitoring the progression of oil pollution both on and offshore, assessing and delineating the scope of pollution, carrying out monitoring of marine water quality and pollutants, satellite remote sensing, and establishment of relevant databases. In terms of cleanup measures, when an oil pollution incident occurs, the responsible government agencies should take action to achieve the best results in the shortest

time possible. First remaining oil should be pumped away from the ship, equipment put in place to prevent further spread, the leak blocked and other emergency measures taken as necessary. In addition, other manpower and equipment should be readied in case they are needed. After the EPA receives notification of an incident they must decide the level of response necessary. According to the plan, responsible government agencies must then establish an onsite response center.

The EPA has decided to pursue additional budget of NT\$180 million in preparation for execution of marine pollution prevention and emergency response plans. The additional funding would ensure sufficient pollution treatment equipment (oil recovery equipment, containment booms, oil cleanup adsorbents), strengthen training for marine pollution prevention and cleanup personnel, establish channels for international cooperation, use of satellite remote sensing to get the earliest control of the oil pollution's direction and scope, research and develop oil pollution removal methods and technology, establish a marine pollution emergency response center and remove and treat marine pollution. By securing the additional budget the EPA hopes that in the future if a marine pollution incident occurs they can work according to the Executive Yuan approved *Emergency Response Plan for Severe Marine Oil Pollution* and have the necessary machinery and equipment for an effective response. This effort will help prevent Taiwan's beautiful waters from again enduring this kind of suffering. 

## *Regulations for Soil Fund Fee Rates Drafted*

**The EPA has released the draft *Regulations Governing the Collection of Soil and Groundwater Pollution Remediation Fees*. The draft stipulates that the fee rate will be set for designated chemical substances based on toxicity, pollution potential and economic considerations. Charges will then be assessed based on the amount of the substance imported or produced. A total of NT\$30 billion will be raised for the Soil Fund at which point further collection will cease.**

The *Soil and Groundwater Pollution Remediation Act* calls for establishment of a Soil and Groundwater Pollution Remediation Fund (Soil Fund) in order to ensure the successful cleanup of subsurface contamination. The Act stipulates that the fund is to be collected from designated chemical substances based on the quantity produced or imported. On April 4, the EPA released the draft *Regulations Governing the Collection of Soil and*

*Groundwater Pollution Remediation Fees* (土壤及地下水污染整治費收費辦法) that will form the basis of the Soil Fund.

The EPA points out that a number of advanced countries have established environmental fee (or tax) collection mechanisms. However, at present only the United States has a levy, the Superfund, aimed at expediting cleanup of soil and groundwater pollution. For this reason Superfund was used as one of the references when designing Taiwan's Soil Fund. Fees were collected through Superfund from 1980 to 1995, totaling between US\$13 – 15 billion over this 15 year period. Although at present Superfund fees are no longer collected, the fund itself is still operating.

The EPA draft regulations state that the total

*(continued on following page)*

(continued from previous page)

amount to be collected by Taiwan's Soil Fund is set at NT\$30 billion. If the Soil Fund reaches this size then further collection of soil and groundwater pollution fees will be suspended. Whether or not collection will begin again is to be decided based on an overall assessment of the fund's effectiveness made at that time.

Soil Fund fee rates will be calculated for chemical substances designated by the EPA based on their toxicity, pollution potential, and economic considerations.

Companies must pay their total soil pollution fee to a specially designated account before the 20th of the first month of every quarter. The fee should be calculated based on the announced fee rates and the amount of designated substances the company

produced or imported in the previous quarter.

If a company pays the soil pollution fee at the time of import they are not obliged to pay again if they engage in further processing of the substance. In addition, small scale companies that would pay less than NT\$100 each quarter, transit goods, or commercial samples are exempt from paying the soil pollution fee.

The EPA noted that Taiwan's environmental loading is very heavy, as evidenced by the frequent reports of illegal waste dumping sites. To help in handling these problems it is important to have a stable, functioning fund collection mechanism. The EPA expects release of the draft *Regulations Governing the Collection of Soil and Groundwater Pollution Remediation Fees* will draw significant attention from all parties, and welcomes suggestions to help perfect the future Soil Fund system. ♣

## *Dioxin Standard for Steel Furnaces to be Announced in July*

**To ensure public health the EPA has carried out continuing studies of the dioxin emissions from different manufacturing process. Study results show dioxin emissions tend to be high from certain steel smelting furnaces, so the EPA has proposed a draft *Steel Industry Electric Smelting Furnace Dioxin Emission and Control Standard*. The standard is based on dioxin controls designed for small and medium-sized incinerators. The standard should be announced in July, 2001.**

The EPA recently set ambitious dioxin control standards for small and medium-sized incinerators. To further strengthen control of dioxin pollution, the EPA has targeted specific manufacturing processes that may generate dioxins for possible control measures. An EPA study carried out by the Industrial Technology Research Institute revealed that in Taiwan's steel industry, dioxin emissions tend to be high from certain types of smelting furnaces. As a result of the study the EPA has focused on electric arc furnaces as their main target for dioxin controls. The EPA has widely circulated a draft control standard for dioxin from steel smelting furnaces and is soliciting comments.

The EPA's efforts to effectively curb airborne dioxin pollution began in August 1997 with the *Waste Incinerator Dioxin Control and Emission Standard* (廢棄物焚化爐戴奧辛管制及排放標準) and promulgation of the *Small and Medium Sized Incinerator Dioxin Control and Emission Standard* (中小型焚化爐戴奧辛管制及排放標準) on October 11, 2000. Passage of these standards brought all waste incinerators under dioxin

controls. Currently, 12 of the 16 operating large-scale incinerators have been retrofitted to comply with the 0.1 ng toxic equivalent/m<sup>3</sup> standard. Of the remaining four, there is no monitoring data available yet for one, while the other three have temporarily halted operations and should finish retrofitting before August 8. Small and medium-sized incinerators are successively making improvements to comply with the new regulations.

Dioxins are generated primarily through combustion, of which incinerators are the major source. However, foreign studies have shown that in addition to incinerators, dioxins are also generated by some manufacturing processes that involve combustion. For this reason, the EPA has initiated study and sampling of domestic manufacturing processes that were likely sources of dioxin emissions as the reference basis for formulating new dioxin control standards for the various emissions sources, progressively reducing Taiwan's dioxin emissions and lowering the health risks they pose.

The EPA points out that it is actively drafting the *Steel Industry Electric Smelting Furnace Dioxin Emission and Control Standard* (煉鋼業電爐戴奧辛管制及排放標準) to ensure that there are regulatory controls in place for these emissions. The draft standard is based on the dioxin control standard for small and medium-sized incinerators, and utilizes the same 0.5 ng/m<sup>3</sup> control value and similar operating specifications. Based on the EPA progress plan, the standards should be announced by the end of July, 2001. However, to give

steelmakers sufficient time, the draft standards allow a 1 1/2 year improvement period for existing facilities. This is the same procedure applied to existing small and medium-incinerators, which must also comply with new dioxin standards by January 1, 2003. The draft proposes implementation of the standard over two phases. The first "improvement" phase, before December 31, 2002, sets dioxin emissions limits for existing electric arc furnaces at 20 ng toxic equivalent/m<sup>3</sup>, on par with Japanese dioxin

emissions limits for existing electric smelting furnaces. The second phase, beginning January 2003, brings into force stricter dioxin emissions limits, temporarily set at 0.5 ng toxic equivalent/m<sup>3</sup>.

The EPA stressed that they are actively studying non-incinerator dioxin emissions and should complete a dioxin emissions inventory within three years. Sources of airborne dioxin pollution will be gradually incorporated into control standards to reduce the threat of dioxins to Taiwan's citizens. ♣

## *No Change in Policy for Gas Pump Vapor Recapturing Equipment*

**Through three years of EPA subsidies, 68% of Taiwan's filling stations have installed gasoline vapor recapturing equipment. To reduce pollution from gas stations as much as possible, the EPA has decided to strictly require that all new stations install vapor recapturing equipment on fuel-pump nozzles. Also, ambient emissions standards will be devised and enforced for existing fuel stations and a national standard testing method set for gasoline vapor recapturing equipment.**

Taiwan has 2,020 gas stations. Collectively, these gas stations release into the air more than 28,000 tons of volatile organic compounds (VOCs). This is a serious environmental problem considering that the fuel stations emit more than 6% of all industrial VOC emissions. In addition, some of the VOC compounds released are very harmful to human health.

The EPA has indicated that VOC emissions from gas stations include such air pollutants as benzene, toluene, xylene, ethylbenzene, and other hydrocarbons. In addition to negative effects on human health, these substances also create environmental ozone pollution problems.

To remedy this problem, the EPA began in 1993 to promote petrol fume recapture and recycling measures at gas stations throughout the island. Between March 13, 1997 and July 4, 2000, filling stations were given subsidies to install vapor recapturing equipment, and during this time 1,366 filling stations installed such devices on their fuel pump nozzles. This figure represents 68% of the 2,020 stations on the island. With this equipment in place, 70% of all fumes are recycled, thereby reducing total VOC emissions by 21,000 tons annually, or 75% of total gas station emissions.

The major reasons for promoting vapor recapturing measures are to reduce air pollutant emissions from gas stations, ensure public health and the health of gas station workers. Unfortunately, gas station operators and their industry association have

reacted strongly. They are opposed to the strict requirements for implementing vapor recapturing equipment because they feel the timing is not yet appropriate.

In response to the industry association concerns the EPA has taken a closer look at some of the issues involved. However, it is clear that Taiwan's ozone pollution problem is worsening and that controlling VOC emissions from gas stations is a necessary measure. In response to concerns that the recapturing equipment installed by gas stations that received subsidies may have been of inconsistent quality, the EPA points out that after the second year of the program the number of foreign equipment suppliers was greater and the technology had matured. Furthermore, after the second year gas station operators began to exchange greater amounts of information about the quality of different brands of equipment available. Since this time most of the equipment installed has demonstrated reasonable levels of functionality. The EPA has also inquired about the pump-nozzle vapor recapturing equipment with gas station employees and customers, who expressed confidence that the equipment does greatly reduce the smell of gasoline fumes.

The EPA emphasizes that pump-nozzle fume recapturing equipment can ensure public health and improve air quality. The EPA will continue to promote related policies – gas station operators should not expect a change in policy direction – and will keep channels of communication and cooperation open with gas station operators. In addition, the EPA will devise regulations mandating installation of gas vapor recapturing equipment at new filling stations. The EPA will also devise ambient emissions standards for existing stations as well as national standard testing methods for recapturing equipment, and assist in the establishment of technical testing groups and other accompanying measures that will ensure smooth implementation of this policy. ♣

## Feature Article

### *In Celebration of Earth Day President Chen Rides Bicycle to Work*

To commemorate Earth Day, President Chen Shui-Bian decided to ride a bicycle to work, accompanied by EPA Administrator Lung-Bin Hau. President Chen called on the people of Taiwan to treasure the natural environment and work to protect our home, the earth. On the previous day President Chen also met with a group of distinguished volunteers. During the meeting, the President restated his vision of making Taiwan a Green Silicon Island, but pointed out that the focus was on “green” and not on a silicon island.

To celebrate Earth Day, President Chen Shui-Bian rode a bicycle to work on April 20. Wearing a bicycle helmet, President Chen rode with EPA Administrator Lung-Bin Hau and Vice Minister of Transportation and Communications Ho Chen-Tan (賀陳旦) from the President’s home to the Presidential Palace. The event was widely reported by the media.

President Chen stated that by riding a bicycle, he hoped to encourage the public to conserve energy, protect the environment, cherish Taiwan, and care for the world which we inhabit. The President called for Taiwan to work towards sustainable development to ensure a clean and safe world for future generations to pursue their own growth.

On April 19, the President also met with the famous American teenage volunteer, Danny Seo. On the subject of the environment, President Chen stated that he has frequently called for

Taiwan to find a new middle path which balances economic development, environmental protection, and social justice. He further noted that there is only one earth, and we must cherish the world left to us by our ancestors. Our generation does not have the right to destroy the environment, and take away choices for future generations. Therefore, it is essential to encourage harmonious relationships between people as well as between people and nature. We must learn how to survive in balance with nature in a relationship that allows both to thrive.

In closing, President Chen stated that building Taiwan into a “Green Silicon Island” – an island with a sound natural environment and an economy based on information technology – represented Taiwan’s vision for the 21<sup>st</sup> century. President Chen stated, however, that the focus of this vision was on “green” rather than on the concept of a “silicon island.” The color green represents culture, human sincerity, and respect for nature, and summarizes the goals and vision of sustainable development. Both democracy and nature emphasize a need for diversity, therefore Taiwan can not neglect the needs of other living things while developing. In this regard, President Chen stated that he hopes that Taiwan can further improve in its efforts in the future to protect wild and endangered animals. ▲

### *Administrator Hau Joins Earth Day Luncheon to Discuss New Policy Plans for EPA*

EPA Administrator Lung-Bin Hau recently spoke at a luncheon organized by the foreign business community to celebrate Earth Day. During his speech, Administrator Hau promised to speed construction of industrial waste disposal facilities and end the activities of the “environmental mafia.” The Administrator also stated that EPA will respond quickly and efficiently to any future major pollution incidents. The Administrator also committed Taiwan to taking a proactive attitude towards accepting international environmental responsibilities, and actively seeking opportunities for international cooperation.

As part of the effort to strengthen ongoing communications with the international community, EPA Administrator Lung-Bin Hau spoke at a luncheon organized by the American Chambers of Commerce, the European Council of Commerce

and Trade, and the American Institute in Taiwan to commemorate Earth Day. In his remarks, Administrator Hau outlined his plans for future EPA policy.

Administrator Hau commented that Taiwan has been an Asian economic miracle. However, economic success has come at a steep cost to the environment. Since the establishment of the EPA ten years ago, the government has laid a solid foundation for environmental protection in Taiwan. However, despite Taiwan’s progress, the Administrator also acknowledged that key infrastructure was still lacking, especially in areas such as industrial solid waste management.

Shortly after taking office, Administrator

Hau visited several illegal dumping sites. According to EPA statistics, there are currently 170 illegal dumping sites spread around Taiwan, including 14 containing hazardous wastes. The EPA has estimated that simply clearing the waste from dumping sites will cost several hundred million NT dollars. Furthermore, due to the nature of the contamination at some sites, it will be impossible to completely return them to their original state. The primary cause for the numerous dumping sites around Taiwan is a lack of legal disposal facilities.

In order to address the situation, the government has initiated plans to build industrial solid waste disposal facilities. At the earliest, the government expects to have sites built in central and southern Taiwan by the beginning of 2002. The EPA will also continue to encourage private investors to invest in waste disposal facilities. In parallel to the construction of the new facilities, Administrator Hau also promised to strictly enforce solid waste disposal laws, and catch illegal operators, particularly the so-called "environmental mafia." The Administrator plans to bring the full weight of government authority to bear on the situation by asking the Executive Yuan to expand the manpower of the Environmental Protection Police. In addition, the Administrator is also prepared to appeal directly to the office of the public prosecutor and investigation agencies for assistance as necessary.

Even with strict controls, however, accidents resulting in environmental pollution will still occasionally happen. Administrator Hau pledged that in the future the EPA will move quickly and efficiently in handling pollution incidents.


After having been in office for one month, Administrator Hau stated that his greatest impression was of the difficulty of smoothly implementing new policies or measures due to the wide number of other agencies that have overlapping responsibilities related to environmental issues. The Administrator cited development of golf courses, management of water resources, and energy policy as examples of policy areas that overlap with environmental protection goals and initiatives. However, all of these areas fall under the jurisdiction of other government agencies, making it difficult to undertake comprehensive planning based on environmental protection needs and principles. To resolve this problem, Administrator Hau hopes that the government will establish a Ministry of Environment and Natural

Resources (環境資源部) to consolidate policy-making authority under one agency, and to make it possible to develop comprehensive plans for environmental protection starting with the efficient management of natural resources.

Administrator Hau commented that prior to the establishment of a Ministry of Environment and Natural Resources, it is possible to use the terms of the *Environmental Impact Assessment Act* to undertake environmental impact assessments (EIAs) of major policies related to development or exploitation of natural resources. Policy EIAs represent a tool for balancing the dual needs of economic development and environmental protection.

Administrator Hau commented that strong NIMBY (not-in-my-backyard) sentiments have made the development of pollution control facilities difficult. The NIMBY attitude represents a significant obstacle to environmental protection efforts in Taiwan, and that the EPA should study the techniques used in advanced countries to resolve protests and community disputes.

On the issue of international environmental protection efforts, Administrator Hau reiterated Taiwan's commitment to honor international treaties. Despite limitations on its ability to maintain normal diplomatic relations or participate in the process of establishing the rules of international treaties sponsored by the United Nations, Taiwan is still a member of the international community and subject to its rules. Taiwan is committed to honoring the terms of international treaties passed by the United Nations, and will move quickly to enact the necessary legal framework to ensure domestic compliance. In addition, Taiwan will seek to actively participate in international environmental organizations, and hopes for the support of the foreign community in seeking entry into formal international bodies charged with environmental protection. Participation will allow Taiwan the opportunity to more fully embrace its stewardship responsibilities as a member of the global village.

In the future, Administrator Hau hopes to build on the model of Taiwan's cooperative relationships with the United States, Canada, and France to pursue broader cooperation with all countries in promoting environmental protection. Administrator Hau hopes to have opportunities to work with Germany, England, and Australia in the future as well as continue leading APEC's efforts to protect marine resources. 

## *Professor Juu-En Chang Appointed EPA Deputy Administrator*

The Executive Yuan recently approved EPA Administrator Hau's decision to appoint Juu-En Chang as EPA Deputy Administrator. Professor Chang is currently Vice Dean of the National Cheng Kung University College of Engineering, and he is expected to bring greater balance to the representation of northern and southern Taiwan to the EPA, as well as extensive administrative experience.

On April 9, EPA Administrator Lung-Bin Hau announced his decision to appoint Juu-En Chang (張祖恩) as EPA Deputy Administrator. Chang is currently Vice Dean of the National Cheng Kung University College of Engineering and professor of Environmental Engineering. Administrator Hau's selection has already been approved by the Executive Yuan and agreed to by National Cheng Kung University.

In commenting on his decision, Administrator Hau stated that over the past month in his role as Administrator, he has traveled to central and southern Taiwan several times and realized that many of the island's environmental problems are located in these areas. He stated that in the future the EPA should place priority emphasis on the problem of balancing north island and south island needs. Professor Chang has lived in southern Taiwan for several years and researched the various environmental problems plaguing the center and south. Administrator Hau hopes that Professor Chang can assist him in improving the situation in those parts of Taiwan.

Administrator Hau further emphasized that

whether in his environmental protection work or in terms of his academic research, Professor Chang has an exceptional experience base. The Administrator is confident that Professor Chang will contribute enormously to the EPA.

A brief look at Juu-En Chang's background includes: in 1973, he graduated from National Cheng Kung University with a bachelors in civil engineering and received a masters degree in civil engineering from the sanitation engineering department of National Cheng Kung University in 1975.

He then pursued advanced education in Japan, receiving a doctorate in civil engineering from Japan's Tohoku University in 1982. His areas of specialty include solid waste treatment, wastewater treatment and environmental engineering. Professor Chang has published in excess of 100 papers in academic journals. He has received approval and praise from all sectors.

In addition to his professorship, Chang also serves as Vice Dean of National Cheng Kung University's College of Engineering and as Executive Director of the University's Research and Development Foundation.

Chang has served successively as Inspector for the Second Committee of the Taiwan Province Industry and Mining Inspection Commission, Deputy Director General of the EPA's Bureau of Comprehensive Planning, Executive Secretary of the Ministry of Education's Environmental Protection Task Force, and consultant to the EPA. ▲

## *Draft of Resource Recycling Act Announced*

The EPA, with the aim of making comprehensive improvement to Taiwan's recycling management system, has announced a draft of the *Resource Recycling and Reuse Act*, and called for comments from outside parties. The draft requires that recycling management regulations be added to current waste disposal laws to facilitate recycling. The EPA draft also proposes providing incentives such as promoting government procurement of recyclable products and easing the acquisition of land for recycling work, in order to assist recycling enterprises. Based on the principle of at source management, the EPA will increase control measures on environmentally unfriendly products and over-packaging for enterprises above a certain scale.

The EPA, with the aim of promoting domestic recycling work by reforming the recycling management system, presented its draft *Resource Recycling and Reuse Act* (資源回收再利用法)

to the public on March 28. The EPA says that statistics showing that over 40% of domestic waste can be recycled highlight the important role of recycling in relieving Taiwan's waste management problems. However, as recycling regulations are currently part of the *Waste Disposal Act* they tend to emphasize control-side action, which has proved difficult to promote recycling.

The EPA says that for recycling to succeed it is crucial that recycling and reuse is considered at all stages of product life, including design, manufacturing, sales, use and disposal. This means that recycling measures must be implemented at all stages in the lifecycle of a product. Because the current *Waste Disposal Act* mainly promotes end-of-pipe control measures, it is necessary to promote new regulations through a *Resource Recycling and Reuse Act*.



This draft calls for the EPA to draw up management regulations governing announcement of approved reusable materials (including by-products, waste products and defective products), and guidelines for temporary storage, reuse facilities, and reuse. This will mean enterprises that recycle in accordance with regulations will not be subject to the stricter regulations of current waste handling laws. As for reusable materials that are not regulated by the EPA, the draft allows enterprises to draw up individual recycling plans to meet their particular needs. The EPA will evaluate applications for these plans on a case-by-case basis.

With the goal of promoting recycling from the source, the draft requires listed enterprises to adhere to the following measures:

1. Recycle announced reusable materials (including by-products, waste products, and defective products);
2. Use a certain percentage or amount of recycled materials;
3. Recycle other materials that can be reused;
4. Design and manufacture products so that they are easy to dismantle and recycle;
5. Label products with their component materials, the recycling mark, and percentages of components used;
6. Use materials and product specifications that facilitate recycling;
7. Use refillable containers for a certain percentage of products.


The draft also requires that the EPA limit or prohibit the use of goods, packaging and containers that do not comply with environmental regulations. Also, in order to prevent the excessive use of packaging, the EPA can require that enterprises improve

their packaging in the areas of space ratio, number of layers, materials and number of items so that it complies with EPA regulations within a certain period of time.

Taking into consideration the influence of the international market on domestic recycling, the draft requires that the EPA coordinate with relevant government agencies when necessary on the management of import and export of recyclable products. Also, with the aim of complying with the spirit of international treaties, the draft requires that exported goods meet the relevant standards in the countries to which they are exported.

The draft also contains incentives aimed at encouraging and facilitating recycling. For one, it requires that government agencies grant priority to the procurement of domestic recyclable products (or products carrying the Green Mark). These recyclable products should account for a certain percentage of government procurements when it is determined that they meet particular standards. This percentage should be determined by the EPA in coordination with other government agencies.

Many recycling enterprises have problems acquiring land for their operations. The draft authorizes the EPA to meet with the agencies in charge of regional and urban planning in order to establish special recycling zones. It also dictates that new industry parks set aside areas for recycling work.

The EPA notes that the US, Japan, Germany, and even South Korea, have completed revisions to recycling laws in recent years. Compared to these advancements, the pace of research and planning of Taiwan's recycling legislation must be hastened. Work on preparing the final version of this draft for legislation will proceed following input from all relevant sectors of society and government. 

## *Administrator Hau Identifies Three Major Policy Points in Response to Public Opinion Poll*

**The Environmental Quality Protection Foundation announced that the 2001 Environmental Suffering Index fell by 1.93 points from last year to a current score of 76.05. Administrator Hau thanked the public for its support, and stated that his future policy program will emphasize public education, pollution prevention, and strict enforcement of environmental regulations.**

Since 1995, the Environmental Quality Protection Foundation (環境品質文教基金會) has conducted an annual public opinion survey called the "Environmental Suffering Index." On April 20, the foundation announced the results of the "2001

Survey of Public Opinion on the Overall State of Environmental Problems in Taiwan." Survey results showed that the index of "environmental suffering" by residents of Taiwan has decreased by 1.93 points over the last year to a total of 76.05 points. In addition, 32% of those surveyed expressed satisfaction with EPA Administrator Lung-Bin Hau's performance in his first month in office, but approximately 60% had no opinion or could not yet make a judgment.

*(continued on following page)*

(continued from previous page)

In response, Administrator Hau stated that the survey showed that the public was pleased with the progress that the government has made in environmental protection. However, the score of 76 for the overall suffering index as well as the relatively high scores in certain other indices shows that there is still work to be done. Administrator Hau pledged that the EPA would adopt a range of new initiatives to improve the quality of Taiwan's environment.

These new initiatives will include a three-fold push by the EPA to promote public education, pollution prevention, and strict enforcement of environmental laws. Administrator Hau stated that the EPA will stress public education efforts in order to encourage the public to value the environment and natural resources.

To promote pollution prevention, the EPA will move to regulate or limit the use of high polluting equipment, processes, or materials. At the same

time, the EPA will also provide incentives to encourage the use of low-polluting technologies as well as resource recovery and reuse.

Lastly, the EPA will conduct a full examination of its standards and regulations to ensure that they are clear and reasonable. Under this premise the Administrator has promised to clamp down tightly on companies who fail to meet discharge standards or intentionally dump wastes as part of the EPA's effort to reduce the "environmental suffering" of the public.

The Administrator also expressed his thanks to the 32% of the public who expressed satisfaction with his first month in office, and also expressed appreciation for their support of the EPA. He also noted that an important task for the EPA was reaching the 60% of the public who were unsure or uninformed about the administration's efforts, to let them know that the EPA is working hard to improve efficiency and effectiveness in promoting environmental protection. ▲

## *Recycling of Fluorescent Light Tubes to Begin in 2002*

**For the last several years, large volumes of waste fluorescent light tubes have been disposed of in landfills due to a lack of a mature recycling technology. Research has shown that release of mercury and other chemical compounds into the environment poses a significant long-term environmental hazard. Given recent advances in recycling technology, the EPA formally announced on April 10 that manufacturers must begin recycling straight fluorescent light tubes by January 1, 2002.**

Each year, Taiwan uses approximately 89,540,000 fluorescent light tubes, which results in nearly 8,900 tons of solid waste per year. Tubes are typically comprised of glass (85%), metals (12.5%), fluorescent powder, and several hazardous chemical substances such as mercury. The high volumes of usage and the presence of hazardous chemicals make waste fluorescent tubes a potentially significant environmental hazard.

The EPA has been monitoring the potential pollution problems associated with waste fluorescent light tubes for several years, and listed fluorescent tubes as a municipal waste containing hazardous substances in 1990 in accordance with the *Waste Disposal Act*. However, since there were no mature recycling technologies for fluorescent bulbs available, the EPA did not take steps to establish a compulsory recycling system.

However, the barriers to recycling waste fluorescent light tubes have gradually been eliminated in


recent years. Manufacturers have already begun to voluntarily collect waste tubes, and technologies for recycling the tubes have matured. Because straight fluorescent light tubes are used in the greatest volume and have the best available recycling technologies, following several years of dialogue between the EPA, manufacturers, and outside experts, the EPA has decided to first promulgate regulations requiring the collection and recycling of only these fluorescents.

According to surveys of the fluorescent tube industry in Taiwan, domestic producers account for 88% of the market and imports account for 12%. Surveys of waste tube disposal show that commercial organizations account for 20% of the total volume and households for 80%. At the moment, 8% of waste tubes are recovered by manufacturers through their take-back network, and 92% are disposed of in landfills or are placed in temporary waste storage facilities.

The proposed new recycling system will use the retail locations of Taiwan's two largest tube manufacturers to establish a take-back network. In addition, consumers can also use municipal waste crews and the existing network of recyclers to dispose of their waste fluorescent light tubes.

At present, there are still no licensed facilities in Taiwan capable of recycling waste fluorescent light tubes. The EPA will review the experience of other

countries in recycling fluorescents, and will provide assistance to manufacturers in establishing a waste straight fluorescent light tube processing plant. Sev-

eral manufacturers have already begun collaborating to build a suitable facility, and hope to begin operations in January of 2002. 

## *Scope of Vendors Required to Install Recycling Facilities Expanded*

**Taiwan's Waste Disposal Act requires specified vendors to install recycling facilities within their stores. In line with the Act, the EPA recently drafted regulations increasing the number of vendors types with these requirements from four to nine. Targeted firms will also be required to clearly display recycling facilities and register with the relevant agency within a specified time limit.**


In order to further improve recycling channels, the EPA in accordance with the *Waste Disposal Act*, promulgated in September 1998 regulations requiring a range of retail stores to install facilities for consumers to deposit recyclable items. Four types of stores were targeted, including: wholesale and retail outlets, supermarkets, franchise convenience stores, and franchise cleaning supply and cosmetics stores.

On April 10, 2001 the EPA further announced draft regulations expanding the scope of target store types from four to nine. The EPA indicated that under the original requirements a total of 6,000 recycling points had been established. The newly listed

store types include convenience stores at transportation hubs, gas stations, beverage vendors at gas stations, wireless communications equipment vendors, and photographic equipment stores.

The draft requires new vendors to register with the relevant environmental protection agency on the day they open and existing vendors within two months of promulgation of the new regulations.

In terms of types of materials to be collected, most vendors must install bins for collecting general containers and dry-cell batteries. Wireless communications equipment vendors and photographic equipment stores must put in place bins for collecting dry-cell batteries, and gas stations must install facilities for collecting motor oil and motor oil containers.

The EPA reported that it expects the draft regulations to be promulgated soon and formally take effect in October of this year. Because these regulations impact the general public's everyday livelihood, the EPA invites input from all parties so that the final draft adequately reflects public needs. 

## *News Briefs*

### **Greening of Erhchung Floodway**

The greater Taipei area has a relatively low proportion of green space. In cooperation with the Taipei County government, the EPA recently promoted a greening project for the Erhchung floodway. This project is intended to develop the areas functionality as a sports and recreation park as well as for environmental conservation efforts. The Wu Gu Natural Wetland Ecology Area of the project was opened on March 11 and provides the residents of greater Taipei with additional leisure activity options.

### **NT\$1 PET Bottle Exchange**

In April of last year, PET refund rates were changed to NT\$0.5. Because the number of PET bottles displaying a refund rate of NT\$1 is slowly shrinking, and in order to improve the operations of the recycling system, the EPA urged individuals that have been stockpiling NT\$1 bottles to exchange them for the refund before June 30. Bottles can be returned to supermarkets and convenience stores.

### **Toxic Response Drills**

As part of the effort to prevent toxic release disasters from occurring, the EPA plans to cooperate with relevant agencies in organizing an emergency response drill at Highway 1's Guan-Miao rest stop. The EPA reported that this series of regional toxic re-

lease incident trainings will demonstrate the emergency mobilization capabilities of government agencies.

### **Hog Farming and Water Protection**

On April 1, Administrator Hau inspected the Tsengwen Reserve Water Purification Plant and the Shan-Shang Treatment Plant. He indicated that water quality greatly effects public health. Reducing hog farming in water quality protection areas is an effective way to meet water quality standards. Reaching water quality goals, however, requires public support. If individuals build in the protection areas opportunistically seeking compensation, the EPA will dispatch inspection agencies to investigate and strictly handle transgressors.

### **2000 Review of Local EPBs**

The EPA recently completed the 2000 review of local-level environmental protection agencies. The EPA used three review categories, Administrative System, Pollution Loading, and Enforcement Personnel & Level of Difficulty, to divide environmental agencies into four different groups. For each of these groups the assigned EPA assigned rankings based on their performance. The top agencies for each group were, respectively: Taichung County, Miaoli County, Taichung City, and Taipei City.

## Environmental Police Force to be Expanded

Since inception in July 1999, the Environmental Protection Police Force has brought 390 environmental transgression cases to justice and prosecuted 1,189 individuals. To increase its capabilities, the EPA is currently in discussions with the National Police Administration to expand the EPF's organizational structure.

In order to strengthen the protection of Taiwan's environment and more effectively enforce environmental regulations, the Executive Yuan in March 1999 signaled its approval of a budget to fund a national Environmental Protection Police Force (EPF). The goal of the EPF was to assist the EPA in enforcing regulations and bringing environmental offenders to trial. On July 1 of the same year, the Executive Yuan issued its formal approval for the establishment of the force.


Although the EPA set up their Investigation Team in 1992, they faced enforcement difficulties because environmental inspectors lacked judicial authority. Under these circumstances the EPA was forced to ask police inspectors to help secure witnesses, collect evidence, and work on large pollution cases, which made timely enforcement very difficult. A dedicated environmental police force, the EPF, was established to help overcome these difficulties, with 96 personnel divided among northern, central, and southern precincts.

To provide the EPF with a legal basis, the Legislative Yuan promulgated an amendment to Article 17.2 of the *Environmental Protection Administration Organic Statutes* (行政院環境保護署組織條例).

The changes required the EPA to equip and staff the EPF so that it could effectively enforce environmental laws and remove any illegal barriers to investigation of regulatory violations.

The EPF has lived up to outside expectations. After its establishment in 1999, and following an initial round of training, the EPF formally began assisting the EPA's Inspection Team. The Inspection Team's statistics show that as of the end of April 2001, the EPF had assisted in the prosecution of eight cases and 23 people related to the "environmental mafia." In addition, 390 cases have been sent to the judiciary for investigation, 1,189 persons sent for prosecution, and 271 pieces of equipment confiscated.

The EPF stated that in its efforts to protect the domestic environment it will comprehensively investigate and bring to trial environmental transgression cases. The EPF will also strengthen coordination with prosecutors and judicial agencies to collectively fight crime. An email address for the general public to report environmental crimes will be set up in the near future. Through greater public participation, the EPF hopes to eliminate the dead spaces and blind spots in the public security landscape so that offenders have no place to escape.

Because the EPF has made a remarkable initial showing, the EPA has indicated that it will be communicating with the National Police Administration to expand the size of the EPF, and thereby further reduce the threat of environmental crime. 

---

## Environmental Policy Monthly, Taiwan, R.O.C.

### Publisher

Dr. Lung-Bin Hau, Administrator, EPA

### Publishing Directors

Juu-En Chang, Ta-Hsiung Lin, Yeong-Ren Chen

### Advisors

Cheng-Chien Wang; Lung-Chic Wang; Chiao-Song Lu; Horng-Guang Leu; Cheng-Chung Hong; Yuh-Fen Horng; Shih-Piao Ni; Hoang-Jang Chang; Shen-Ho Chang; Shu-Chiang Fu; Wu-Hsin Chen; Chau-Teh Chen; Hsiung-Wen Chen; Shis-How Chen; Lian-Ping Chen; Sheng-Ming Pong; Wan-Chu Huang; Chea-Yuan Young; Te-Po Tung; Chang-Shya Yueh; Shean-Rong Cheng

### Editor-in-Chief

Gwo-Dong Roam

### Executive Editors

Y.F. Liang, Shiu-an-Wu Chang,  
Lee-Kuo Hsiao, Bruce Berkman

### Editorial and translation support provided by:

Hui-kuo Consulting, Ltd., Productivity Asia, Ltd.

The EPM has been published monthly since July 1997. The current issue was published in May 2001. The EPM is available in electronic form free of charge on the EPA website ([www.epa.gov.tw](http://www.epa.gov.tw)). For inquiries or subscriptions to the printed version, please contact:

### Environmental Policy Monthly

### Environmental Protection Administration

Office of Science and Technology Advisors  
41, Sec. 1, Chung-Hwa Rd., Taipei, Taiwan, R.O.C.  
tel: 886-2-2311-7722, ext. 2203, fax: 886-2-2311-5486  
e-mail: [umail@sun.epa.gov.tw](mailto:umail@sun.epa.gov.tw)

GPN: 2008600068

Contents Copyright 2001.

行政院新聞局出版登記證局版北市誌字第壹陸壹壹號  
中華郵政北台字第6 1 2 8 號執照登記為雜誌交寄