

# Environmental Policy Monthly



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## ***Special Feature: EPA Plans for the Second Half of 1999***

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*-- EPM Editorial Staff*

### ***Work Plans: Bureau of Comprehensive Planning***

#### **Compose Taiwan's Agenda 21:**

- Formulate Taiwan's Agenda 21 according to resolutions passed by the National Council for Sustainable Development. Composition of the Agenda will be done strategically and in line with the principles of feasibility and broad sector participation.

#### **Advance the National Environmental Protection Plan (NEPP):**

- The NEPP is the guiding blueprint for environmental protection in Taiwan. By 2011 the NEPP aims to prevent pollution and improve public health; raise quality of life and create a peaceful, comfortable environmental; conserve environmental resources; pursue sustainability and support international environmental protection activities.

- The NEPP is divided into near, medium and long-range implementation stages. Each stage has concrete, clear indicators to measure environmental quality, gauge reduction of environmental pollution, and evaluate environmental control measures. These indicators can be used to evaluate the effectiveness of the NEPP and will be the basis for future discussions of its amendment.

#### **Promote Plans to Restructure Community**

#### **Environments:**

- In order to cope with the growing number of restructuring communities, the Bureau of Comprehensive Planning will aid local environmental agencies to establish assistance groups to help with community restructuring. By December 1999 the Bureau will aid an estimated 300 communities, finish training for close to 4,000 environmental protection volunteers, and initiate household improvement projects, such as environmental checkups, promotion of recycling, environmental cleanups, composting of kitchen leftovers, and the "greening" of the environment. This work is aimed to bring out the beauty and unique features of local neighborhoods.

#### **Fully Realize Taiwan's EIA System:**

- Since its establishment in December 1994, the *Environmental Impact Assessment Act* has had its different stages completed. The key points of current implementation work include improving EIA for governmental policies, continuing the collection of base data for deliberation of EIAs, improving the efficiency of EIA reviews and continuing the tightening of EIA tracking and monitoring systems, among others.

### ***Work Plans: Bureau of Air Quality Protection and Noise Control***

#### **Preservation of Air Quality:**

- Actively promote the formulation of a total quantity control system according to regulations for total quantity control in the *Air Pollution Control Act*.

- Push forward special plans for the improvement of the Northern Air Quality Region, the Central Air Quality Region and the Kaohsiung-Pingtung Air Quality Region, aimed at the unique nature of each region.

#### **Stationary Pollution Source Control:**

- Announce the control standards for air pollution prevention facilities in the dry cleaning industry to improve emissions from the dry cleaning industry, and progressively include it under Air Bureau control.

- Provide subsidies to filling stations for installation of gas vapor recapturing equipment on pump nozzles, thereby reducing organic pollutant emissions.

- Amend dioxin emission standards for refuse incinerators.

#### **Mobile Pollution Sources:**

- Encourage consumers to use clean fuel vehicles and establish a multi-tiered system for the collection of air pollution prevention fees for gasoline use. Establish a monthly fuel quality control system to ensure

fuel quality. Besides this, from 1 January 2000 the use of leaded fuels will be banned. Related dissemination work for this program will also be stepped up.

- Promote the use of electric motorcycles and improve assistance to manufacturers to enable total annual sales of such motorcycles to reach 2% of total production or import volume.

#### **Noise and Vibration Control:**

- Amend articles nine and ten of the *Regulations Concerning the Prevention of Aircraft Noise in Areas Surrounding Airports*. Revisions will be made in coordination with Article 37 of the newly amended *Civil Airlines Act*.

- Plan controls for traffic related noise pollution.

- Measure and research the electro-magnetic radiation characteristics of cellular phone base stations.

- Reformulate guidelines concerning the application for subsidies for special air quality purification zones, which the EPA helped local governments design.

- Continue to encourage Taiwan Sugar Corp. to complete construction of a plan approved by the Executive Yuan for planting roadside trees.

## ***Work Plans: Bureau of Water Quality Protection***

### **Review and Revision of Laws and Regulations:**

- Amend the *Water Pollution Control Act* and increase regulation to prevent groundwater pollution.
- Push for the passage of the *Marine Pollution Control Act*, amend the *Drinking Water Management Statutes* and build a control system for the grading and demarcation of water sources.
- Promote protection of drinking water sources-waters and water quality by collecting and organizing implementation plans from relevant Central Government agencies in support of the outline plan for protecting drinking water source-waters and water quality.
- Promote the phase-out of, and compensation for, many pig-raising enterprises.

### **Comprehensive Environmental Planning for River Basins:**

- Complete the greenification of the high banks of 290 hectares of river and draft environmental protection plans for sustainable river management.

#### **Tamshui River Cleanup Follow-up Project:**

- Continue to improve water quality in the Tamshui River Basin through promoting proper waste disposal, reducing effluent from pollution sources, strengthening education about river environments, and river bank greenification/beautification.

#### **Industrial Wastewater Management:**

- Formulate criterion for the punishment of industrial wastewater treatment violations.
- Set up a tradable discharge permit system and plan automatic monitoring and online reporting for large-scale industries.
- Plan internet based reporting mechanisms and continue to follow up on the enforcement of limits to transitional industrial standards.
- Continue diagnosis assistance and waste sludge

inspection based on river basin management practices.

#### **Industrial Park Wastewater Management:**

- Ensure that industrial wastewater treatment capacity and ability in industrial parks is sufficient and increase park sewer hookup to 100%.
- Coordinate with the MOEA in dealing with parks that have had a high number of petitions filed against them.

#### **Residential Wastewater Management:**

- Continue to promote combined wastewater treatment facilities for buildings and neighborhoods.
- Promote management assistance for neighborhood sewers.
- Continue to promote regular cleaning of building wastewater treatment facilities.
- Investigate adding control regulations for sewer system construction/management and for residential wastewater.

#### **Groundwater Pollution Prevention:**

- Continue plans to install a groundwater monitoring network and carry-out plans for comprehensive investigation of soil and groundwater pollution in industrial parks.
- Continue to carry-out site specific groundwater pollution prevention work and oversee the initiation of remediation for polluted sites.

#### **Marine Pollution Prevention:**

- Promote harbor and fishing port pollution prevention work
- Continue to monitor Taiwan's marine environment and oversee the organization of monitoring data.

#### **Reservoir Water Quality Improvement:**

- Investigate amending the reservoir eutrophication assessment index and normalize legal regulation of non-point source pollution prevention.

## ***Work Plans: Bureau of Solid Waste Management***

### **Resource Recycling:**

- Formulate a draft Act for resource recycling and reuse and establish a legal system to restrain the amount of waste produced and encourage resource recycling and reuse.
- Encourage islandwide carryout of recycling plans by local EPB's and increase public knowledge about recycling.
- Establish more recycling points; improve recycling efforts by campus, community and government agencies; and improve waste collection for outlying areas.
- Establish an open clearance and treatment recycling market; upgrade recycling system technology; subsidize incentives for such developments as reuse technology, recycling and reuse methods, and trash reduction measures.

### **General Waste Management:**

- Review standards for the required number of personnel in various types of cleanup organizations.
- Continue to promote plans for setting quantity-based garbage collection fees.
- Promote recycling (composting) of large quantities of leftover rubbish from fruit and vegetable markets.
- Promote incinerator fly-ash reuse.
- Improve the handling of refuse dumped near rivers.

### **Industrial Waste Management:**

- Strengthen industrial waste management: Promote inspection controls for industrial waste; publish

*(continued on next page)*

results from industrial online reporting; include an estimated 13,000 factory sites under controls; and improve the auditing and tracking capabilities of the Center for Industrial Waste Control.

- Remediate illegal dump sites: Screen, investigate, sample and analyze groundwater at illegal dump sites; establish an order of priority for dumpsite clearance; and oversee cleanup efforts at all levels of government.
- Bolster efforts to install industrial waste treatment facilities: Work with the MOEA to complete the *Second Five Year Plan for Industrial Waste Treatment*; firmly establish strategies and measures for industrial waste treatment; assist industry members invest in the setup of treatment facilities; and work with the IDB to setup waste treatment facilities.

- Strengthen industrial waste recycling and reuse: Speed up promulgation of management guidelines and regulations for the reuse of general industrial waste; bolster assistance to industries applying for waste reuse permission.

- Bolster the control system for the import/export of hazardous industrial waste: Amend regulations for the import/export of hazardous wastes using the Basel Convention for reference; work to comply with international standards for managing, tracking and reporting of hazardous waste; and actively participate in international conferences on bilateral accords.

**Improve Efforts for Soil Remediation:**

- Comply with the Legislative Yuan’s review of the draft *Soil Pollution Remediation Act* and work to speed it’s final legislation.

***Work Plans: Bureau of Environmental Sanitation and Toxic Chemicals Control***

**Environmental Chemical and Biological Agent Management:**

- Explore amending management models for the *Environmental Agents Control Act*.
- Carry out the investigation and assessment of management practices for environmental agents and build a database based on investigation results.
- Strengthen oversight of the environmental agents industry, disease vector control firms, and sales of relevant agents.
- Strengthen the public’s common sense knowledge regarding environmental agents and bolster relevant regulations.

**Toxic Substance Management:**

- Consider amending laws governing the management of toxic chemical substances.
- Finish preparations for the classification and announcement of 200 toxic chemical substances, with the further announcement of an additional 100 toxic

substances by the end of the year 2000.

- Fully support the Executive Yuan’s *Plan for the Maintenance of Public Safety*, and effectively prevent against the occurrence of disasters.

**Drinking Water Safety and Sanitation:**

- Increase the number of regulations regarding the management of drinking water and amend existing regulations.
- Promote the proper management of water quality for drinking and non-drinking water and water sources, water quality treatment additives, and drinking water equipment (including regular sampling of such equipment).

**Environmental Sanitation:**

- Promote activities for National Cleanup Week; organize beach cleanups and cleanup of excessively dirty areas; build a profile for the management of public toilets and prohibit all types of unsanitary environmental behavior.

***Work Plans: Bureau of Performance Evaluation and Dispute Settlement***

**Follow-up Controls for Key Administrative Plans and Fiscal Year Evaluations:**

- Continue follow-up evaluations of Executive Yuan policies, such as policies to expand domestic demand and raise national competitiveness.
- Promote the use of Eco-labeling: Accelerate the opening of Eco-label product categories; increase public knowledge about Eco-labeling; cooperate with green-procurement clauses in the *Government Procurement Act*; and further international mutual recognition of Taiwan’s Eco-label, the “Green Mark”.

**Improve the Quality of Handling Public Dispute Settlements:**

- Provide subsidies to county/city governments

to improve operation of the system for public dispute settlement and improve settlement results to increase public satisfaction.

- Support government reengineering and enhancing of service quality: Examine all types of legal and regulatory practices, support downsizing of the Provincial Government, simplify application reviews, and continue follow-up on EPA handling of publicly submitted emails.

**Strengthen Supervision, Coordination and Incentives Regarding Pollution Control:**

- Draw up a system to investigate fine collection

*(continued on next page)*

and reporting to assist local efforts to collect environmental protection fines.

- Bolster public awareness of public dispute settlement processes and promote development of appraisal technology: Simplify second round mediation procedures for public disputes; improve public knowledge about government decrees concerning public disputes; popularize the use of remote technology in the investigation of cases of severe public disputes; and build a complete background database for sensitive areas of public dispute.

#### **Develop Practices for Public Dispute Mediation:**

- Research and draw up mechanisms and strategies for public dispute settlement to deal with the increasing variety of public disputes; proactively assist all county/city governments to mitigate severe or sudden pollution incidents.

#### **Strengthen Inspection Controls for Major Pollution Sources:**

- Coordinate cooperation between EPA inspectors and the Environmental Police in order to strengthen the inspection and prosecution of major violations to environmental law; and support the EPA's execution of special investigations and supervisory controls.

### ***Work Plans: Bureau of Environmental Monitoring and Data Processing***

#### **Air Quality Monitoring:**

- Perform operational management of air quality monitoring stations: Continue operation, maintenance and management of existing air quality monitoring stations, monitoring vehicles and mobile monitoring stations; and improve functionality tests for ozone and suspended particle monitoring instruments.

- Initiate preparations for the setup of photochemical assessment monitoring stations and fine particulate matter monitoring stations: Support the air pollution risk assessment plan; take responsibility to install and prepare one monitoring station each for photochemical assessment and fine particulate matter.

- Improve air quality forecasting technology: Improve air quality forecasting technology and automated forecasting for suspended particulate matter and ozone, the pollutants which contribute most significantly to poor air quality.

- Enhance monitoring data reporting functions: Publish quarterly and annual reports on air quality; provide electronic data files; provide search functions for global air quality monitoring data websites.

- Provide UV measurement and reporting services: Handle daily UV index monitoring and forecasting, and initiate functional upgrades and improved accuracy for the forecasting system.

- Plan the integration of the Taiwan regional air quality monitoring system: Incorporate air quality monitoring results from various regions; improve the review of local-level human observation data and guide local improvements in monitoring data quality.

- Improve air quality monitoring in areas that have not yet setup monitoring stations through the use of air quality monitoring vehicles and mobile monitoring techniques.

#### **River Basin Water Quality Monitoring:**

- Continue to promote the Tamshui River Basin Water Quality Monitoring Plan: Build comprehensive data on the Tamshui river system and build water quality data for different tidal levels on the Tamshui river

to assess accomplishments in cleaning the river and to use as a reference for control measures.

- Establish technologies to monitor and inspect riverbed quality: Establish the relationships between water quality, riverbed quality and aquatic organisms, and build data on the special spatial/temporal characteristics of the riverbed.

- Community environmental quality monitoring and assessment plan: Improve community environmental quality monitoring; investigate establishment of community environmental indexes and environmental quality data; and improve public participation in the process.

#### **Environmental Information:**

- Promote a "web-style" reporting system for environmental protection affairs: Continued issue and management of electronic accounts for online environmental reporting and continue promotion of ten priority items for online environmental reporting; support dissemination of internet-based reporting.

- Continue installation of the Public Environmental Geographical Information Database.

- Expand the functions and information content of the EPA's internet home page.

- Popularize international standards for electronic environmental information exchange: Support participation in international conferences and issue English publications for environmental information exchange.

- Raise the information processing capability of environmental protection agencies: Improve information processing guidance for all levels of environmental protection agencies and install unified environmental information systems.

- Teach and popularize environmental information: Improve web construction for the Asia Pacific Virtual Technology Exchange Center, with substantial content including the environmental technology information database and market developments in the environmental protection industry.

## ***Work Plans: Bureau of Incinerator Engineering***

### **Incinerators in Operation:**

- There are currently nine incinerators in operation in Neihu, Mucha, and Peitou in Taipei City, Shin-dian and Shulin in Taipei County, and in Taichung, Chia-yi, Tainan, and Kaohsiung Cities. In the future, besides practical assistance to improve dioxin emissions for plants in operation, the EPA will also assist in the proper treatment of fly ash and bottom ash and review achievements in incinerator operation.

### **Incinerators Under Construction:**

- There are currently 14 incinerators under construction, including those in Hsinchu City, Jenwu (Taipei County), Chianding (Pintung County), Houli (Taichung County), Hsichou (Changhua County), Kongshan (Kaohsiung County), Keelung City, Litzu (Ilan County), Lutsao (Chia-yi County), Yungkong (Tainan County), the Southern Districts of Kaohsiung

City and Taoyuan County, and Wujih (Taichung County). In the future the EPA will urge the completion of construction activities and continue to track implementation of EIA review findings.

### **Incinerators Under Public Bidding and Bid Preparation:**

- There are presently 6 incinerator plants under public bidding, including those planned for Taitung County, Nantou County, Chunan (Miaoli County), Changhua County, Yunlin County and the Northern District in Taoyuan County. The 7 incinerators still under bid preparation include those planned for Hsinchu County, Chigu (Tainan County), Ta'an (Taichung County), Taichung City, Hualian County, Huhsi (Penghu County) and Taipei County. In the future bids will be issued with all possible speed.

## ***Work Plans: National Institute of Environmental Analysis***

### **Strengthen Management of Environmental Analysis and Testing Institutions:**

- Amend regulations concerning the management of environmental analysis and testing institutions and add/amend relevant criteria.
- Continue permit reviews, inspections, blind testing, and technical personnel training for environmental analysis and testing institutions.
- Assist in the establishment of institutions to analyze and test dioxin emissions and VOCs in exhaust ducts.

### **Handle the Planning of Environmental Analysis and Testing Policy and Promote the Strengthening of Quality Control Systems:**

- Set 25 standardized methods for environmental analysis and testing.
- Accept regular onsite reviews by NATA (National Association of Testing Authorities) recognized organizations.
- Encourage local county/city EPBs to be verified through the R.O.C. lab verification system.

### **Continue to Promote Large Scale Cross-Organization Research Plans:**

- Implement several related plans, such as the *Research Plan for Environmental Water Body Analysis of Streams in Erh-jen-hsi, Tungkang, Kaohsiung and Pingtung* and the *Plan for Investigation and Analy-*

### **sis of VOC Distribution in the Taipei Metropolitan Area. Research and Analysis of Trace Materials in the Environment**

- Initiate air and environment dioxin content inspections for the Northern Air Quality Region.
- Investigate environmental background presence of dioxins in the soil.
- Build analysis technology for plane state polychlorinated biphenyls (PCB's).

### **Support the EPA in other Endeavors:**

- Support the EPA to test air and noise quality; drinking water, ground water, river basin and industrial waste water; waste material, toxic substances, and environmental agents.

### **Carry out the investigation of environmental organisms and the toxicity of environmental organisms.**

- Initiate experimental research on the toxicity of wastewater organisms.
- Support the establishment of a micro-toxicology research laboratory, as stated in research plans to assess health risks from micro-particles.
- Investigate accumulation of toxins in riverbed shellfish and establish standard testing methodologies.
- Test the toxicity of hormones to organisms in the environment.

## ***Work Plans: National Institute of Environmental Training***

### **Work Plans for the National Institute of Environmental Training:**

- Fulfill the requirements for implementing the National Environmental Protection Plan by furthering achievements in the training of environmental personnel.

- Strengthen international cooperation in the area of environmental personnel training.
- Build a database of trained and qualified environmental personnel and improve manpower resources for environmental protection; examine and amend en-


vironmental training materials and coursework to include new environmental techniques and concepts.

- Push the licensing system for professional en-

vironmental personnel in order to allow industries to be able to find talented environmental professionals.

### ***Work Plans: Central Taiwan Division of the EPA***

- Perform regional environmental management and EIAs.
- Enhance public awareness and environmental education.
- Implement controls on fixed pollution sources.
- Improve pollution controls on motor vehicles.
- Execute the outline plan for drinking water source water protection.
- Perform monitoring of groundwater quality.
- Execute waste treatment plans.

- Install a data management system for permits for the manufacture and import of toxic chemical substances.
- Promote close inspection of heavy metals in the soil, pollution remediation, and the construction of an information management system for maintaining soil quality.
- Clear away possible breeding areas for dengue fever-carrying pests. 

### ***Regulations for the Recall of Diesel Vehicles Being Formulated***

**Following the announcement and implementation of guidelines on vehicle recall and repair, the EPA is formulating similar standards for diesel vehicles. The guidelines for diesel vehicles are largely the same as for gasoline vehicles. Although the draft has already been completed, the exact schedule for its legislation is still uncertain.**

To ensure that the exhaust from all in-use vehicles complies with relevant standards, the *Air Pollution Control Act* specifically requires vehicle models to undergo emissions testing. If these tests reveal that a certain vehicle model has no way of coming into compliance with standards (due to poor design or assembly, for example) the car manufacturer or importer must recall and repair all vehicles of the model type in question within a given time limit.

In order to bring these regulation into practice, the EPA on September 1998 announced the *Guidelines Concerning the Recall and Repair of Motor Vehicles In Use*. This formally brought forward the system for the recall and repair of motor vehicles still in use. However, the guidelines only target gasoline powered automobiles and motorcycles. Diesel vehicles, for reasons such as the differences in sales channels, were not placed within the original scope of the guidelines.

Now, after the gas-vehicle recall and repair system has been in place for close to a year, the EPA has just formulated the *Guidelines Concerning the Recall and Repair of Diesel Engine Vehicles In Use*. This set of guidelines aims to formally include diesel engine vehicles within the recall and repair system.

The draft guidelines stipulate that responsibility for the recall and repair of diesel vehicles lies with the vehicle manufacture who applied to the EPA for "Proof of Satisfactory Vehicle Inspection." Taiwan-produced vehicles will be the responsibility of the domestic manufacturer, whereas the local representative and the foreign manufacturer will share equal responsibility for imported vehicles. Aside from this, if the application for the imported vehicles were submitted by a trade

association responsibility will be shared equally among the association in question, representative commercial agents and the vehicle manufacturer.

Vehicle recall can be self-initiated by the manufacturer or mandated by the EPA. Before EPA investigation and verification testing, the manufacturer may self-initiate a recall of vehicles in violation of emissions standards to undergo testing and repairs. While undertaking this process the manufacturer is required to inform the EPA. If within 15 days the EPA has not expressed other views, it is an indication that the EPA has approved the self-initiated plans.

On the other hand, if verification tests or the competent environmental protection authority indicate that the emissions control system or other related original parts on a domestic or imported vehicle are ineffective and result in violation of emissions standards, then the EPA can mandate the recall and repair of such vehicles. After receipt of notification by the EPA the manufacturer has 90 days in which to bring forward a recall and repair plan. If the manufacturer has doubts about the EPA test results, they must notify the EPA within 20 days to request an investigation committee.

The testing of diesel vehicles will proceed in two phases: initial investigation and verification investigation. The testing portion of the initial investigation will include random sampling of 5 vehicles of a certain model type. If the average emissions test values for the vehicles or the individual values for three or more vehicles exceed standards, then further verification investigation must be performed. According to regulations, verification tests must then be performed on a sample of ten vehicles, for which an average numerical index will be calculated. If this exceeds satisfactory emissions test standards, then it is determined that this model vehicle is not in compliance with standards set in the draft guidelines and will be entered onto the list of vehicles for recall and repair.

The EPA will initiate sample tests of the vehicle model in question in conjunction with the process of



manufacturer recall and repair. If test results indicate satisfaction of emissions standards the EPA will send written notification to the party in question, and recall and repair of cars which have not yet been brought up to specification will continue. However, if test results are still not satisfactory, the manufacturers' recall and repair plans will not be recognized by the EPA. According to the guidelines, plans underway must then be terminated and new plans brought forward within 20 days, meaning that the recall and repair process must be initiated again. After 90 days, once a set proportion of cars have been renovated, the EPA will again perform sample tests.

In order to assess the future practicality of islandwide enforcement of the guidelines, the EPA will

### ***Solid Waste Complaints Still #1***

**The EPA has released a white paper on the handling of public nuisance complaints which reveals that in 1998 out of over 85 thousand cases handled, those involving solid waste were the most, with cases of odors rapidly increasing. On a regional basis, Taipei City, Taipei County and Taoyuan County were the three frontrunners for the most complaints filed.**

The EPA recently released the *White Paper on the Handling of Public Nuisance Complaints*, which provides statistical analysis and explanations for policies for dealing with public complaints. According to these statistics, in 1998 Taiwan's environmental protection agencies received a total of 85,769 cases of public nuisance complaints, an average of 39 cases for every 10,000 persons and one case every 6 minutes.

The White Paper points out that when complaints were separated by category, the nearly 32,000 cases involving solid waste (including general environmental sanitation) comprised 37% of all cases. Solid waste complaints were at the top of the list in 16 of Taiwan's counties and cities. Noise pollution was number two with nearly 20,000 cases, or 23% of the total, with cases of factory noise pollution the greatest, at over 30% of that total. Air pollution (not including complaints for odors) was number three with around 15,000 cases. Odor air pollution was number four with around 14,000 cases, and water pollution was number five with around 5,000 cases.

Looking at trends for each type of pollution, com-

plaints of odor have grown every year, 155% over six years to make it number one over other types of pollution. Complaints on waste were number two, having grown 83%. Water pollution complaints were number three at 39%, and noise has remained the same.

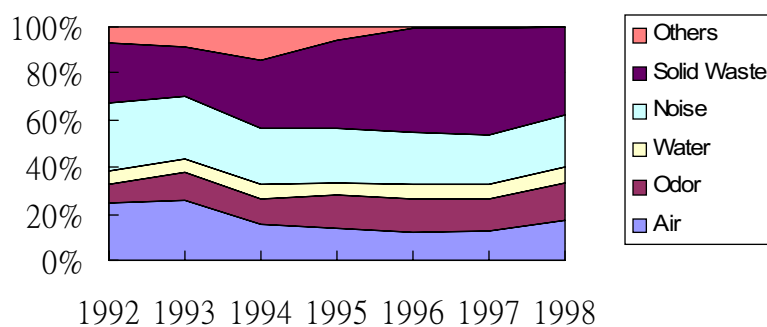
As far as the time schedule for the promulgation of the guidelines, the guidelines are basically finished but follow-up public hearings to gather more opinions about the draft have not yet been called. Thus the implementation date for the guidelines is not yet certain. ●

Broken down by pollution source, industrial pollution was number one at 29%, around 23,000 cases; general residential pollution was 24%, around 20,000 cases; commercial pollution made up 16%, around 14,000 cases, making it clear that industrial pollution had overtaken general residential pollution. However, it is worth noting that the gap between the two was not large, which indicates that public expectations about the quality of life are growing daily, and the levels of tolerance for neighbors' pollution are getting lower.

Looking at various trends, complaints regarding pollution from transportation vehicles had the highest rate of growth, growing 189% in six years; second to this complaints on general residential pollution grew 43%; commercial pollution grew at a rate of 19%; industrial pollution remained static; construction projects, government agencies, public groups, schools, and military units all showed declining trends.

On a regional basis, Taipei City was number one in complaints with around 19,000 cases (30%), and Taipei County was second with 15,000 cases (18%). Together the greater Taipei area had a total of 40% of all nuisance complaint cases. Taoyuan County was number three with around 5,300 cases, number four was Kaohsiung City with around 5,100 cases, and Taichung

**% of Complaints by Pollution Type**






County number five with around 4,600 cases. All of these regions are large metropolitan cities, and the high number of cases are related to the high population densities there. In addition to these areas, nuisance complaints grew 40% in Tainan County and 39% in Taoyuan county in comparison with 1997 showing that citizens' struggle for higher quality of life and their expectations for environmental protection agencies are growing rapidly.

The White Paper also points out that the issues of most concern to the public are the improper disposal of waste and the burning of garbage. Second to these were the stench created by factory air emissions, city noise and factory noise. In general these views mirror the distribution of the number of complaints.

The EPA expressed that now the public can use the Taiwan region 24hr. environmental reporting hotline, email, or written notification to file a complaint.

There are also confidentiality measures in place to protect the public and encourage reporters to leave

contact information, which will aid inspectors get a handle on the nature of the pollution and the reporters' needs and handle them properly according to the law. Relevant agencies will also make an effort to get the results of the inspection back to the reporter. Furthermore the person who files the complaint may check the inspection results with the original receiving agency ten days after reporting the case.

The White Paper points out that due to the efforts of environmental agencies at all levels the average complaint processing time has been shortened from 20.1 days in 1992 to 2.07 days in 1997. The future handling of complaints will focus on bringing quality up another notch. For example improving education efforts to inform the public on ways they can check the results of a case, the listing, tracking and reinvestigation of reoccurring cases, and tools for "talking honestly" and "counseling" for both the reporter and reported parties, to increase the willingness of the petitioned party to change and to effectively reduce public dissatisfaction. 

## *Standards for Defining Asbestos Wastes to be Updated*

**At present all asbestos containing wastes are designated as hazardous industrial wastes. However, the EPA has decided to update standards and in the future wastes from asbestos containing electric and thermal insulation or asbestos sprayed buildings will only be defined as hazardous where it is non-solidified asbestos and asbestos content is 1% or above.**

On July 16 the EPA called together experts, scholars, local environmental protection units (EPUs) and industry members to discuss regulations concerning asbestos containing industrial waste. At the conference an initial consensus was reached to update current definition standards in consideration of U.S. and Canadian asbestos control laws.

In the regulations currently set forth in the *Standards for Defining Hazardous Industrial Waste*, asbestos and its waste products refers to asbestos wastes produced by industrial organizations. Because the regulation is overly simple, there is no indication as to whether all asbestos containing products should be treated as hazardous wastes after their disposal.

According to the *Standards for Industrial Waste Storage, Collection and Treatment Methods and Facilities*, asbestos containing wastes should first undergo wet treatment, be stored in double layered plastic bags with a thickness above  $75 \times 10^{-3}$  cm and then placed in a hard container. Treatment through solidification can also be used provided that airborne dispersion is prevented.

Industry members indicated that treating all asbestos containing wastes as hazardous, whether or not they will be released into the environment, is too strict and difficult to implement.

They also pointed out that according to a 1996 report from the WHO, ILO, and UNEP, there is only

danger of inhalation of asbestos fibers at the raw-material stage. Because most asbestos products have already been solidified they are safe to general consumers. For this reason asbestos wastes should be classified as general or hazardous wastes based on whether or not they have already been solidified or are in states where they are friable or will disperse into the air.

This May, the Friction Materials Association asked the EPA to amend relevant regulations in reference to laws from the U.S., Canada, Europe, Japan and other countries. They requested the EPA use a chart listing asbestos containing hazardous industrial wastes and revise clauses in the standards for defining industrial hazardous wastes to read, "asbestos electrical and thermal insulating materials and wastes from asbestos sprayed buildings shall be considered hazardous industrial wastes."


As far as treatment methods for asbestos containing wastes, general regulations mandate that the pressure resistance of asbestos containing products must be above 10kg for it to be considered solidified. In reality though the pressure resistance of most products is a couple of hundred kilograms and will not result in harm to the human body after fracture. Thus they should not need to be further stored in plastic bags and placed in solid containers. EPA officials noted that they would consider industry members' opinions.

An official noted that U.S. and Canadian laws governing asbestos would be used as references to amend current standards. Furthermore, besides adopting the suggestions of the Friction Materials Association, the EPA will only classify waste as hazardous if the as-

*(continued on next page)*

bestos content is above 1% and easily broken into powder by hand. If, however, the waste is proven not to disperse into the air, it will be classified as general waste regardless of whether asbestos content is above 1% or not. The EPA's only fear is that local EPUs will have difficulty in identifying and executing the new regulations. The EPA plans to use a chart format to display relevant criteria to facilitate industry compliance and to help EPUs in enforcement.

During the July 16 meeting the EPA requested in-

dustry members provide information on asbestos contents, pressure resistance, and relevant preventative measures for their products for the EPA to use as a reference for the amendments. An EPA official stated that the conclusions reached at the conference will be circulated to relevant agencies and if there are not too many dissenting opinions they will be announced and brought into force in around one and a half month's time. 

## ***Dioxin Emissions Standards to be Set for Small-scale Incinerators***

**Due to domestic concerns over incinerator dioxin emissions, the EPA decided to set dioxin emissions standards for small-scale incinerators. Besides requesting industry members to provide related materials, the EPA will also contract technical organizations to build an information database and formulate normalized standards.**

The scare in Belgium over dioxin-tainted milk has drawn concern from a broad range of Taiwan's citizens. In response the EPA has begun compiling background data on dioxin and started the formulation of dioxin controls for small-scale incinerators. In order to ensure that matters unfold smoothly, on July 15 the EPA called together local environmental protection units (EPUs) and industrial firms associated with the building of small-scale incinerators for discussions to better understand real operating conditions.

Currently, the regulations regarding dioxin emissions in the *Emissions Standards for Air Pollutants from Waste Incinerators* only place limits on those incinerators that process over 10 tons/hour or 300 tons/day (the standard is 0.1ng-TEQ/Nm<sup>3</sup> for new incinerators and 1.0ng-TEQ/Nm<sup>3</sup> for existing incinerators). There are no emissions restrictions for small-scale incinerators.

According to industry representatives attending the meeting, improving incinerator emissions to comply with future government design standards is technically possible, for example through the addition of active carbon, rapid cooling, end-of-pipe technologies, and other methods. However, even though it is technically possible, industry members were highly concerned over the cost of improvements. In addressing this issue industry representatives expressed that they needed to consider problems of cost and time. Too strict standards or too tight a time schedule are both inappropriate. They urged the EPA to come up with new standards only after considering all sides of the issue.

As far as technology for dioxin monitoring, industry members noted that there are already domestic laboratories carrying out related work, however their analysis technology and capacity are both limited. On the other hand, tests done abroad are prohibi-


tively expensive. They further said that research points to a fixed proportional relationship between dioxin content and CO emissions quantities. With regular monitoring, dioxin content can be extrapolated according to CO emissions tables, with no need for further testing – it would only be necessary to increase the degree of strictness in quality control requirements for personnel, technology and laboratories.

The EPA has already requested that within one month's time, builders of small-scale incinerators provide relevant definitions and emission standards from countries like the U.S. and Japan. The EPA also requested that incinerator builders provide numbers for the time and expense needed to bring dioxin emissions into compliance with the standards from the countries mentioned above. This data will assist the EPA to make detailed considerations of current practices when developing legislation.

In order to promote control measures for small-scale incinerators, the EPA is already actively working on a number of issues pertaining to contract bidding. Goals of the plan include:

1. Build a database on environmental capacity for dioxin emissions.
2. Build models for best-practices to prevent production of dioxin.
3. Build best-technology to prevent dioxin emissions.
4. Establish dioxin emissions control standards.

Work for the plan includes investigating the scale, treatment quantities, waste composition, operating conditions, monitoring facilities, and air pollutant emissions for Taiwan's 144 small and medium-sized incinerators. The 50 most representative plants will be selected for onsite inspection. The EPA will also assess the probable amount of dioxin emissions for Taiwan's small and medium-sized incinerators and analyze the quantities of chlorinated compounds and other dioxin ancestor compounds and try to better understand the underlying reasons and stages of dioxin formation.

The EPA also noted that 12 million NTD were set aside for formulation of the plan, which will be finished before December 2000. 

**News Briefs**

**SO<sub>x</sub> Emissions and Odor Standards for Stationary Pollution Sources Amended**

On June 30 the EPA announced portions of the amended *Stationary Source Air Pollutant Emissions Standards*, containing two major revisions. One amendment regards sulfur oxide (SO<sub>x</sub>) emissions from combustion. Because Taipei City and 10 other counties and cities stopped using fuel oils with sulfur content over 0.5% in 1996, the emission concentration for SO<sub>x</sub> has been proportionately lowered to 300ppm and emissions standards set according different to fuel states. The other new standards include the boundary limits for odors or repugnant strange smells in agricultural zones, which will follow the example of industrial zones and be lowered to 5 times the original standard. The EPA stated that the amendments took force three days after their announcement.

**New Subsidies for Landfill Methane Used to Generate Electricity**

To respond to global climate change and improve air quality the EPA recently announced the *Guidelines to Encourage the Use of Methane Gas for Electricity Generation*. Based on the actual amount of electricity sold, firms that generate electricity can receive a subsidy for using methane gas from landfills at a rate of 0.5 NTD per kilowatt hour. Such firms should provide

documentation before the end of every January, April, July and October and apply to the EPA for the subsidy.

**PCB Containing Capacitors and Transformers Must be Reported by the End of October**

The EPA stated that users of capacitors or transformers whose insulating fluids contain above 1,000ppm of polychlorinated biphenyls (PCBs) must register or apply for permission at local environmental agencies before October 31 1999. Only then will they be allowed to resume operations.

**Air Pollution Fees to be Used for Street Cleaning**

Dust particles raised from city streets, known as fugitive dust, is a serious problem. To improve city air quality the EPA circulated a memo requesting counties or cities that have collected air pollution fees greater than 20 million NTD to compile budgets for sweeping and washing city streets to prevent fugitive dust. For those who collected over 100 million NTD for air pollution fees the EPA additionally requested at least 20% of the yearly budget be appropriated to street cleaning. According to statistics 22 counties and cities have appropriated funds to expand the scope of these plans. Of these nine have opted to budget for privately owned and operated companies.

**Summer UV Rays Reach Dangerous Levels**

To provide the public with forecast information on ultraviolet (UV) rays the EPA installed an additional 10 monitoring stations. After a year of monitoring it was discovered that 77% of summer days reached high levels and 49% reached very high levels. The EPA called on the public to avoid activities in strong sun and to take steps to prevent sunburn.

Since July 1 1998 the EPA has been preparing a UV forecast index, building a database for monitoring information and compiling teaching materials for middle and elementary schools. At the same time the EPA has also pushed forward work on all types of UV ray monitoring, forecasting and public education to improve the public's awareness of prevention methods against UV rays and reduce the harm caused by them.

In order to provide more complete UV index monitoring information, in January of 1999 the EPA installed 10 new UV ray monitoring stations, bringing the total number of stations to 15. Of these, 7 stations are in Northern Taiwan, 4 in Central Taiwan, and 4 in South-

ern Taiwan.

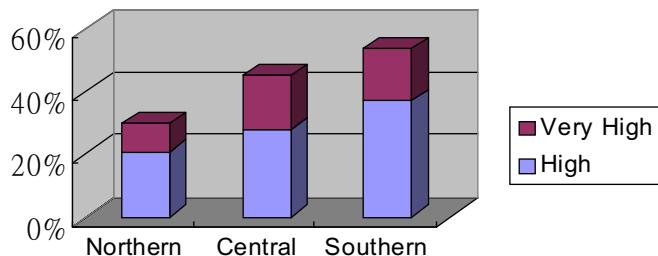
The EPA expressed that in accordance with the effect of UV rays on human health, the UV Index (UVI) was broken down into exposure levels ranging from 0-15. According to the index exposure levels 0-2 are minimal; 3-4 low; 5-6 moderate; 7-9 high; and 10-15 very high. Only 20 minutes in the sun at high levels of UV exposure or 15 minutes at very high levels will result in sunburn.

Based on analysis of monitoring information from January to May of this year over 30% of days reached high levels or above for all of Taiwan. In the South of Taiwan however this figure was 54%. Besides this, in Southern and Central Taiwan

over 17% of days reached very high levels.

Looking at the distribution of UV rays during the summer season, after the end of the "plum rains" when Taiwan enters the summer season, UV numbers from the entire region often reach very high levels. Analysis of monitoring data from May 1997 to April 1999 shows

**% of Days with High UV Exposures by Region**



*(continued on next page)*

that 77% of days during the summer season reached high levels or above, and 49% of days reached very high levels. Data from different seasons and regions is displayed on the two graphs attached.

Besides this, long term UV monitoring shows that during the summer days, there is a simple approximate relationship between weather and UV levels. UV rays are at minimum levels during weather ranging from rainy to heavily overcast; at low levels during heavily overcast to cloudy weather; moderate levels during cloudy to partly cloudy weather; high levels during partly cloudy to scattered cloud weather; and at very high levels during scattered clouds to sunny weather.

The EPA pointed out that those at greatest risk from UV exposure include people with fair complexions; people who burn easily; people with many freckles or moles; people who have had skin cancer or whose families have a history of skin cancer; people who spend long periods of time on outdoor activities; people who spend long hours working indoors but tan intensively during vacations; and people who live at high elevations.

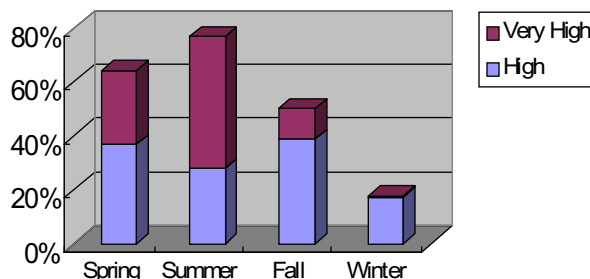
At present the EPA has setup a total of 15 UV monitoring stations. Besides announcing each days monitoring results, every afternoon at 5:00pm the next day's UV forecast is also announced. The public can get the information on the UV index or forecast from any major media or from the Internet. Additionally the

EPA has provided a free of charge call up system to provide the latest UV ray monitoring data and other environmental information.

The EPA advises that the best way to avoid harm from UV rays is to limit activities under the sun between 10:00am – 2:00pm and to take appropriate protective measures, for example using a sun umbrella, wearing a hat, long sleeved outfit, putting on sunblock, wearing sunglasses, etc. Attention to the UV forecast for each day is also important. The EPA pointed out that if people ignore the existence of

UV rays and don't take protective measures it is very easy to be suffer harm from UV ray exposure.

% of Days with High UV Exposures by Season



**Upcoming Activity Notice**

The EPA's Water Quality Protection Bureau will host a seminar on High-Tech Industries Wastewater Treatment Technology, with presentations by Dutch companies on topics such as *Membrane Bio-Reactors* and *Modern Biotechnological Treatment of Industrial Wastewater*.

**Place:** Microelectronics and Information Systems Research Center, National Chiao Tung University, 1001 Ta Hsueh Road, Hsinchu

**Time:** October 19, Tuesday at 9:00 am

**Registration :** Please contact Ms. Hung-lan Tseng at: Tel. (02) 2325-5223 ext. 110 Fax. (02) 2706-2533 E-mail: ftis@ftis.linkease.com.tw

**\*\* The Seminar will be Free of Charge**

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