

Environmental Policy Monthly



Taiwan R.O.C.

Volume III, Issue 17

November 2000

In this issue . . .

Feature Article

***Executive Yuan Calls for Halt to Construction of the 4th Nuclear Power Plant* 6**

The Executive Yuan has officially called for a halt to construction of the Fourth Nuclear Power Plant. Edgar Lin, who began his anti-nuclear struggles 20 years ago and has been crowned the “father” of the anti-nuclear movement, expressed his reaction to the announcement as “surprised” and “moved”.

***Marine Pollution Control Act Passed* 2**

The Legislative Yuan officially passed the *Marine Pollution Control Act*. A legal basis now exists for handling response to marine oil spills, ocean dumping and incineration, harbor pollution, and other marine pollution incidents in Taiwan’s jurisdictional waters.

***Eco-Diplomacy: NGOs Participate in Taiwan-US Bilateral Conference* 2**

On Oct. 22 Administrator Lin led a group to Hawaii for a bilateral Taiwan-US meeting on sustainable development. The trip was Lin's first opportunity to promote eco-diplomacy abroad since taking office.

***EPA Develops Concrete Measures to Encourage Private Investment in Industrial Waste Market* 3**

The EPA recently convened a second meeting to discuss the draft *Rules Governing Incentives to Encourage Private Sector Investment in Construction of Industrial Waste Disposal Facilities*.

***Erhjen River Cleanup Taskforce Formed* 4**

On September 27 the EPA announced formation of a taskforce charged with cleaning up pollution from illegal smelting operations in the Erhjen River.

***Traditional Industries Earn Environmental Awards* 5**

The 9th annual Green Business Awards were announced on October 3. Edgar Lin presented the awards to this years winners, who will be greeted by President Chen.

***2001 Proposed Environmental Budget Tops NT\$9.6 Billion* 7**

Compared on a similar 12 month basis, this is an increase of 11%, or NT\$1 billion, over this years budget.

***Minimization and Recycling to be Top Priority of Future Waste Management* 8**

While previous waste management strategies focused

on intermediate treatment, the new administration will make recycling the cornerstone of its policy.

***Electric Scooter Subsidy Under Reassessment* 8**

The EPA reached a consensus with industry representatives to decide the fate of the current EPA subsidy for electric scooters over four meetings to be held over a three week time span.

***Alternative Energy: Concept of “Virtual Power Plant” Proposed* 9**

Edgar Lin recently called an energy and environment conference to discuss the future of electricity development in Taiwan.

***Initial Tests of Waste Glass as Road Paving Material Successful* 10**

The first stretch of road has now been laid with the new recycled material. The agencies involved are now planning to prepare construction criteria to pave the way for the use of recycled glass in the future.

***80 Uses for Toxic Chemical Substances Eliminated* 10**

To prevent wide-spread overuse of toxic chemicals, the EPA and industry have reached a consensus to eliminate certain uses for particular substances.

***EPA Lists 4 Insecticides Effective 2002* 11**

In the future any products containing these ingredients must apply for a permit and provide clear labeling.

***News Briefs* 11**

***Preparation for Collection of Water Pollution Fee Begins* 12**

The EPA has been preparing to collect the new fee through continuing work with county and city governments to perform a nation-wide review of 23,000 industrial facilities and sewer discharge facilities.

Marine Pollution Control Act Passed

The Legislative Yuan has officially passed the *Marine Pollution Control Act*! With the Act's passage a legal basis now exists for handling emergency response to marine oil spills, ocean dumping and incineration, harbor pollution, and other marine pollution incidents within Taiwan's jurisdictional waters. The EPA's Bureau of Water Quality Protection pointed out that passage of the *Marine Pollution Control Act* is a milestone in Taiwan's efforts to protect the marine environment. The Act will next be sent to the President for promulgation.

On June 3, 1999 the EPA delivered the draft *Marine Pollution Control Act* to the Executive Yuan for review. In just over one year's time, on October 13, 2000, the Legislative Yuan completed a third and final review, effectively bringing the Act into law. The EPA noted that the Act's passage reflects the increasing importance attached to environment by the government. The *Marine Pollution Control Act* consists of a total nine chapters and sixty articles governing marine areas under Taiwan's jurisdiction, including: intertidal zones, internal waters, territorial seas, contiguous zones, exclusive economic zones, and waters superjacent to the continental shelf.

Deputy EPA Administrator Lin Ta-hsiung expressed that, in terms of the future division of labor, the Coast Guard Administration will be the main executive agency in charge of enforcement, collection of evidence and apprehension of suspects. The EPA will delineate marine control zones, set marine environment control standards, and formulate zone based enforcement plans and pollution control measures. Other environmental agencies will be responsible for setting up marine environment monitoring stations within their jurisdictions and for regular publication of monitoring results. Environmental agencies must also take appropriate preventative measures, and when necessary may request the competent industrial authority to restrict usage of marine areas.

Deputy Administrator Lin pointed out that in the past harbor waters were often oily and dirty, so

the new Act requires marine vessels to install pollution prevention equipment. Port authorities are also empowered to restrict the movement of vessels suspected of polluting the marine environment or prevent such vessels from leaving the harbor. After the Act is passed, all port authorities must install pollutant receptacle facilities and may collect a disposal fee for their use.

In addition to preventing against land based sources of pollution, marine construction, treatment of wastes on the ocean, and pollution from marine vessels, the *Marine Pollution Control Act* also stipulates that vessels are liable for the damages they cause from marine pollution. Owners of marine vessels must provide a guarantee or take out liability insurance against pollution damages, victims may then directly seek compensation with the insurer.

The EPA's Bureau of Water Quality Protection stated that in the future marine waste disposal or incineration will only be allowed in zones designated by the EPA. The EPA will collect a marine disposal fee from all approved final disposal sites based on the quantity and nature of the wastes disposed. Violation of marine disposal regulations will be punishable by a maximum sentence of ten years in prison and a maximum fine of NT\$100 million. If serious pollution results at any site engaged in marine disposal or incineration, immediate action should be taken to remove the pollution or alleviate its effects. In addition, the proper competent authority and industrial authority should be immediately notified.

Since the passage of the *Marine Pollution Control Act* the EPA will begin formulation of an emergency response plan for marine oil spills. The Executive Yuan will also form a special task force to deal with serious marine pollution and oil spills. In addition a cross-ministerial task force will be set up to deal with general marine pollution incidents. However, the formulation of further supporting regulations is necessary before Taiwan's marine areas can truly be well protected. ☉

Eco-Diplomacy: NGOs Participate in Taiwan-US Bilateral Conference

On October 22 EPA Administrator Edgar Lin led a group to Hawaii to participate in a bilateral Taiwan-US meeting entitled "Sustainable Development and Public Participation - A Vision of the 21st Century". The trip received much attention as this was the Administrator's first opportunity to personally promote environmental diplomacy

abroad since assuming office. Aside from government environmental officials, representatives from NGO environmental groups in Taiwan were also invited to attend with the Administrator.

On October 22, EPA Administrator Edgar

Lin led a group to Hawaii to participate in a bilateral Taiwan-US meeting entitled "Sustainable Development and Public Participation - A Vision of the 21st Century". The event was one of the annual meetings held under the Taiwan-US Environmental Protection Cooperation Agreement, and took place in Honolulu, Hawaii from October 23-27. Before departure Administrator Lin expressed that there would be greater room to enhance cooperation between Taiwan and the US on environmental protection in the future. In addition to traditional exchanges between government officials, cooperation will be expanded by including environmental groups. Topics for discussion will also be broadened from pollution prevention technology to sustainable development.

The EPA's Office of Science and Technology Advisors noted that since being signed on June 21, 1993, an annual review is carried out of the Taiwan-US Environmental Protection Cooperation Agreement. The review looks at the achievements of the past year and work plans for the coming year. Over the years, Taiwan's EPA Administrator has always personally led a group to the US to undertake the bilateral review of work under the agreement. However, Edgar Lin has broken with tradition by setting "Sustainable Development and Public Participation - A Vision of the 21st Century Vision" as the main theme for this year's annual meeting.

Lin believes that environmentally advanced countries in Europe and North America have better mechanisms for allowing public participation in environmental affairs, helping people to make environmental protection part of their daily lives. Only when people set an example through their personal actions can management of the environment truly gain the critical mass necessary to succeed. In the 21st Century, public participation is the only way to raise environmental quality and for Taiwan to en-

sure the sustainable growth of *Ilha Formosa*, the "beautiful island." It was in recognition of the key role of public participation that Edgar Lin chose this as the theme for this year's meeting.

In addition to government officials, the meeting was also attended by representatives of environmental groups, chosen by both EPAs, who spoke on their experiences participating in environmental protection. Taiwan environmental groups were represented by Prof. Chan Chang-chuan (詹長權), Director of the New Environment Foundation (新環境基金), and Dr. Chi Chie-ying (齊淑英) of the Eco-Conservation Alliance (生態保育聯盟). The US EPA arranged for representatives of the internationally recognized Sierra Club and Nature Conservancy, as well as the Hawaiian branch of the Earth Justice Legal Defense Fund, to attend. Also on the US side were the Assistant Administrator of the EPA; Deputy Directors from the EPA's 3rd, 9th, and 10th regions, the Assistant Secretary of the Maryland State Environmental Protection Department, and the Director of the Hawaii State Department of Health.

At the meeting Administrator Lin spoke on the topic, "Is Taiwan's Environmental Development Sustainable?" The presentation drew on the United Nation's Sustainable Development Indicators and the WWF's Consumption Pressure Index to illustrate Taiwan's current environmental conditions and future policies. Lin's speech left a strong impression with the US representatives. Lin also suggested that future bilateral plans should support Taiwan's current environmental priorities, such as: improving industrial waste management, river cleanup, and improvement of urban air quality. While most of the Taiwan delegates returned home after the meeting, Edgar Lin continued on to San Francisco to attend the "Chinese-American Environmental Protection Roundtable." 

EPA Develops Concrete Measures to Encourage Private Investment in the Industrial Waste Market

In order to seek solutions to the current industrial waste disposal problem, the EPA recently convened a second meeting to discuss the draft *Rules Governing Incentives to Encourage Private Sector Investment in Construction of Industrial Waste Disposal Facilities*. The draft measures state that when proposed incineration facilities encounter opposition from local communities, the government must use its civil authority to resolve the protests and protect the rights of the investors. Industry representatives expressed their appreciation and thanks

for the "preferential measure", saying it represents an excellent business opportunity.

The EPA recently invited representatives from the Ministry of Economic Affairs, the National Science Council, the Ministry of Education, the Ministry of the Interior, the Council of Agriculture, the Department of Health, and the industrial waste disposal

(continued on following page)

(continued from previous page)

association to discuss the new draft *Rules Governing Incentives to Encourage Private Sector Investment in Construction of Industrial Waste Disposal Facilities* (鼓勵公民營機構興建事業廢棄物處理設施獎勵辦法). The meeting was chaired by the EPA Bureau of Solid Waste Management. The draft rules clearly state that each government agency must assist businesses in obtaining land, in completing the re-zoning of sites outside of urban areas, and other measures as part of a joint effort to help remove the barriers to investment in new disposal facilities.

Specifically noteworthy is the fact that the draft rules state that county and city governments must undertake negotiations and use their public authority to resolve any irrational or unreasonable protests directed towards waste disposal facilities already in operation or still in the construction phase. The measure is designed to help protect investors' rights. This new requirement is clearly a change from the government's previous handling of BOO and BOT incinerator projects and is the issue of greatest concern to potential investors. The chairman of the industrial waste disposal association stated that many local politicians are afraid to deal with local protests due to re-election concerns. Establishing a regulatory basis allowing government agencies to exercise their civil authority to resolve protests would be of tremendous benefit to businesses.

For example, companies developing a small-

scale incinerator in Chiayi County encountered protests from the local community when they began their legally approved construction. The county government stated that since the companies were not undertaking a public project the government had no authority to intervene. As a result, all the capital, equipment, and manpower invested by the company are deadlocked in the project while construction is postponed indefinitely. Potential investors in industrial waste disposal facilities take flight when faced with such a possibility.

Some representatives have expressed concern over the availability of funds given the tightening of the government's finances. However, industry representatives stated that they were impressed by the government's effort to introduce the new measures. The representatives indicated that direct subsidies were not necessary if the government could provide basic support such as low-interest loans, tax incentives, financing and investment offsets.

The EPA Solid Waste Management Bureau indicated plans to convene another large-scale public hearing in the future and will invite all relevant government agencies including the Ministry of Finance, the Ministry of Economic Affairs as well as representatives from the banking industry and other experts. The Waste Bureau promised to take the opinions expressed during the meeting into consideration in the further revision of the draft in order to craft a set of measures capable of achieving the government's policy of stimulating private investment in new facilities. ◉

Erhjen River Cleanup Taskforce Formed

On September 27 the EPA announced formation of a task force charged with cleaning up pollution from illegal smelting operations in the Erhjen River, putting cleanup of the Erhjen among the most pressing of the EPA's current jobs. Deputy Administrator James J. Lee, who will convene the taskforce, has asked Kaohsiung County, Tainan County, and Tainan City to assemble teams to enforce removal of illegal smelting operations on the Erhjen. Even with the recent cry for clemency from local aluminum smelters, the EPA has only strengthened its resolve to mop up polluters in the Erhjen.

After taking post as EPA Administrator, Edgar Lin stated that cleanup of the Kaoping, Erhjen and Chiangchun (將軍溪) rivers would be given top priority, and set aside NT\$230 million in the 2001 budget for this work. To carry out this plan a special taskforce was formed, drawn from the Ministry of the Interior, Ministry of Economic Affairs, Coun-

cil of Agriculture, as well as local governments, the environmental police, inspection organizations, and local citizenry. The taskforce hopes to improve the longstanding pollution problems caused by smelting operations on the Erhjen River.

The EPA's determination to proceed with cleanup has alarmed some enterprises. In addition to issuing complaints through local legislators, a newspaper advertisement was placed pleading with the government to show leniency. On October 6 EPA Deputy Administrator James J. Lee went to Tainan County to hold talks with industry, local representatives, the environmental protection bureaus (EPB) of Kaohsiung County, Tainan County, and Tainan City, and the Industrial Development Bureau. While there the Deputy Administrator again reaffirmed the EPA's commitment to cleaning up the Erhjen, but also came away with a better under-

standing of industry's thinking on the matter.

Representatives from aluminum smelting enterprises located on the Erhjen expressed that they are not the primary polluters of the river and that in fact recovery and reuse of upwards of 60% of Taiwan's aluminum products and containers proceeds through them. In this sense they have a contribution to resource recycling in Taiwan and pleaded with the government to leave them with a way out of the current predicament. Working through local legislators the enterprises organized a public hearing in hopes of persuading the central government to give them a life line by legalizing their operations at the current locations or by opening a special industry park for smelting industries.

Deputy Administrator Lee emphasized that the

Erhjen River has long been polluted by scrap metal smelters and that most smelters currently use illegal equipment or operate in unlicensed buildings. The pollution from these operations has spread in Kaohsiung County, Tainan City and Tainan County. Over the past 20 years governments from the three have often organized joint inspection teams but were consistently foiled as smelters went from open air to underground operations.

The new taskforce estimates that all preparations to begin removal of smelting operations will be complete by the end of December. By next year 60 smelting operations should be removed from the banks of the river. At the same time, waste removal, river beautification and any necessary cordoning-off of sites will proceed. 

Traditional Industries Earn Environmental Awards

Results of the 9th annual Green Business Awards were announced on October 3 by the EPA. The awards are intended to encourage enterprises for their efforts to improve environmental performance. A public ceremony was held on November 2. Edgar Lin personally presented the awards to this year's winners, who will also be greeted by President Chen Shui-bian. As the highest environmental honor in Taiwan, the Green Business Award is highly sought after by Taiwan businesses to help raise their domestic image and international competitiveness.

Results of the 9th annual Green Business Awards were announced on October 3 by the EPA and a public commendation ceremony held on November 2. In total ten enterprises receive the award each year. EPA Deputy Administrator James J. Lee noted that in the past business saw protecting the environment as a burden and impediment to economic development. However, companies have now come to realize that doing a good job of protecting the environment can actually help open markets and increase profits.

The EPA has held the Green Business Awards annually since 1992. As the highest environmental honor in Taiwan, the Green Business Award is highly sought after by Taiwan businesses to help raise their domestic image and international competitiveness. A total of 21 enterprises competed for this year's awards. After a careful review, the following ten enterprises were chosen for the award: China Motor Corp. (Hsinchu Plant), Taiwan Cement Corp. (Hualien Plant), Nomura Corp. of Taiwan, Taiwan Power Co. (Hsiehe Plant), Applied Materials Taiwan, Cheng Loong Corp. (Yanchao Plant), King Car Food Industrial Co. (Yuanshan Plant), Windbond Electronics Corp., (Plant 4), Hsinho Chemical Co., and Ford Lio Ho Motor Co.

The EPA's Bureau of Performance Evaluation

and Dispute Settlement pointed out that the award is traditionally captured by large companies so it is worth noting that among this year's recipients are two small to medium-sized enterprises (SMEs), the Nomura Corp. and Hsinho Chemical Co., proving that SMEs can do a good job of protecting the environment as well. Although Nomura Corp. is a traditional high pollution, high risk, labor intensive enterprise, the employees have put their hearts into environmental improvement and done a laudable job implementing waste minimization measures.

The EPA emphasized that a number of traditional industries received the Green Business Award this year, including manufacturers of automobiles, cement, machinery, electronics, chemical, beverages, paper and electricity generation. These companies are helping to debunk the myth that high pollution industries cannot be effective at protecting the environment. For example, Taiwan Power's Hsiehe Plant is 25 years old but has attached great importance to end-of-pipe treatment and conforms with all standards for air, water, noise, and solid waste. The Hsiehe Plant has also increased resource and energy efficiency, greatly cutting the sites oil consumption rate and water usage.

In addition, Applied Materials Taiwan, a hi-tech company, and Ford (Hsinchu Plant) won the award last year, making this their second appearance in the winners circle. Applied Materials Taiwan has effectively strived to reduce solvent usage, consistently tracks transport of toxic chemical substances, and has built up detailed emissions quantity data. From 1996 to 2000 the company invested a total of NT\$564 million in pollution control equipment and continues to invest in environmental improvements. 

Feature Article

Executive Yuan Calls for Halt to Construction of the 4th Nuclear Power Plant

The Executive Yuan has officially called for a halt to construction of the Fourth Nuclear Power Plant. Edgar Lin, who began his anti-nuclear struggles 20 years ago and has been crowned the "father" of the anti-nuclear movement, expressed his reaction to the announcement as both "surprised" and "moved". As the EPA Administrator, Lin has clearly expressed his opposition to the Fourth Nuclear Power Plant and feels the recent decision creates an opportunity to recast Taiwan's industry and energy policies.

After a meeting at the Executive Yuan on October 27, Premier Chang Chun-hsiung (張俊雄) personally called a press conference to formally announce the Executive Yuan's final decision to halt construction of Taiwan's Fourth Nuclear Power Plant. Premier Chang stated that, "building a nuclear free Taiwan is our only choice." He also emphasized that, "For Taiwan's future generations, for the one planet entrusted to humanity, we must make a rational, responsible, and conscientious decision. The choice to stop construction of the Fourth Nuclear Power Plant is such a decision."

Executive Yuan Premier Chang proposed six reasons for the Executive Yuan's decision. (1) even without the Fourth Nuclear Power Plant the island will not lack electricity; (2) concrete, feasible replacement plans exist; (3) the prodigious nuclear waste problems the project would entail; (4) no matter how remote the chance of one occurring numerous worries exist over the handling of a nuclear accident; (5) the cost of stopping the project now is still lower than the continued investment required, and; (6) the sustainable development of Taiwan requires a gradual phase out of nuclear energy.

Edgar Lin, crowned the "father" of Taiwan's anti-nuclear movement, expressed his reaction to the Executive Yuan's announcement as both "surprised" and "moved". Lin called on remaining supporters of the Fourth Nuclear Power Plant to drop the old model of thinking, "4th nuclear plant = electricity = economic growth = stock market growth," and have confidence in the new government.

Administrator Lin stressed that the alternative energy plans proposed by Minister of Economic Affairs Lin Hsin-yi are very feasible.

He stated that, "Amendment of the *Electricity Industry Law* (電業法) will stimulate liberalization and diversification of Taiwan's electric sector. On top of that, the optimization of the electricity distribution system will ensure that Taiwan not only doesn't lack electricity but enjoys a surplus." Lin believes that Taiwan cannot afford to develop nuclear energy because it has no room to make mistakes. If a nuclear incident were to occur Taiwan is absolutely without the capacity to handle it. In addition, insurmountable bottlenecks exist in the treatment of nuclear waste, in terms of both land acquisition and treatment technology. Furthermore, in terms of continuing construction, the costs implied by construction and decommissioning of the plant are far higher than simply discontinuing the project. Thus from both an economic and environmental perspective terminating the Fourth Nuclear Power Plant is the wisest choice.

In terms of the political firestorm it has created, Administrator Lin has faith that the decision on the Fourth Nuclear Power Plant was not tied to political or ideological positions. Further, linking capital flight to the Fourth Nuclear Power Plant is unfair. Passage of amendments to the *Electricity Industry Law* will open greater opportunities for energy development and enrich Taiwan's businesses and society.

From a personal and official standpoint Lin opposes construction of the Fourth Nuclear Power Plant on all fronts, including technology, safety, risk, and nuclear waste treatment. Lin said that he would be worried if construction were to continue, and that management of Plants One, Two and Three should also be strengthened. The Administrator wished that he could have carried more weight in the decision making process surrounding the nuclear plant.

Addressing the potential for public protests to other energy projects proposed in the Fourth Nuclear Power Plant alternative energy plans, Lin stated that he would exert his civil authority to end any unreasonable protests. In the future the EPA will strictly review any plans to establish private sector power plants but will take steps in accordance with the law to end any illegal protests of properly approved projects.

2001 Proposed Environmental Budget Tops NT\$9.6 Billion

NT\$9.6 billion was set aside for environmental protection in the 2001 central government budget. Compared on a similar 12 month basis, this is an increase of around 11%, or NT\$1 billion, over this year's budget. Of these funds, 39.4% (NT\$3.8 billion) is allocated for incinerator construction and 35.1% (NT\$3.4 billion) for industrial waste management. Another 6.3% (NT\$6 billion) is set aside for the cleanup of river pollution.

The EPA recently proposed the 2001 environmental protection budget, totaling NT\$9.6 billion (see chart). The FY2000 budget spanned 18 months due to a government adjustment to synchronize the fiscal year with the calendar year. After adjusting the FY2000 budget to 12 months and removing incomparable budget items, the 2001 budget is nearly 11%, or NT\$1 billion, larger than the 2000 budget of NT\$8.7 billion. The EPA pointed out that in addition to regular EPA projects, a portion of next year's budget will go to supporting three new priority jobs, waste disposal, river pollution cleanup, and protecting urban air quality.

Incinerator construction is the largest single budget expenditure in 2001. However, as more of the 11 scheduled incinerator projects will be completed by the end of this December the peak construction period for incinerators has passed. For this reason, the budget allocated for incinerator construction next year is only NT\$3.8 billion,

NT\$6.5 billion less than in the last budget. Proportionally the budget for incinerator construction has dropped significantly, from 58% to 39.4% of the total budget.

The second largest budget expense is dedicated to control measures for hazardous and general industrial wastes, at 35.1% of the total budget, or NT\$3.4 billion. This represents an increase of 24%, or NT\$700 million from last year. Industrial waste

control is one of the three key environmental foci of the new government (the other two are river pollution cleanup and urban air pollution control). The new budget allocates NT\$2.1 billion to help resolve final disposal problems, NT\$650 million for storage and treatment of industrial wastes, NT\$300 million for the clearance of illegal dumpsites, and NT\$100 million for emergency trash disposal and construction of small scale incinerators.

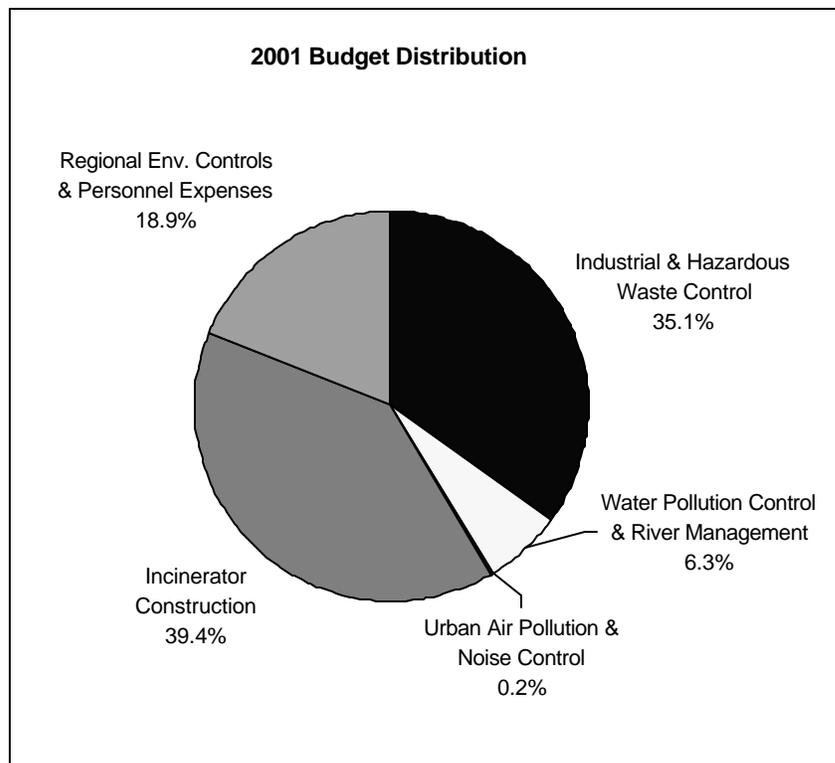
Budget for river pollution cleanup will mainly go towards execution of the first phase of a four year river basin and marine area water quality management plan. For this, NT\$2.3 billion will be spent on cleaning up the Erhjen, Chiangchun, and Kaoping rivers. Additionally, NT\$3.8 billion will be used on plans for reservoir, river, and groundwater management, cleanup of the Tamshui River, industry park control, and beautification of the Erhchung floodway.

Eighteen billion, or 18.9% of the 2001 bud-

get, will go to general environmental work, such as the establishment of regional environmental management mechanisms, and personnel expenditures. This is an increase of NT\$20 million over the 2000 adjusted budget. Some of the work under this heading includes regional environmental management,

trash minimization and recycling, implementation of environmental impact assessments, improving environmental sanitation, and training.

In terms of urban air pollution control, while the official budget only includes NT\$20 million, another NT\$2.7 billion in funds from the air pollution control fee will also be available to strengthen protection of air quality.



Minimization and Recycling to be Top Priority of Future Waste Management

The EPA expects to achieve zero growth in waste volume by 2001. While previous waste management strategies focused on intermediate treatment the new administration will make recycling the cornerstone of its policy. The EPA will gradually institute the change in policy with the goal of creating a "recycle and reuse society." The new policy is "reduce, recycle, and reuse as the first choice, disposal as the second." The EPA Bureau of Solid Waste Management stated that the government can not continue to build incinerators and landfills indefinitely and that recycling has clearly become the global trend in waste management.

In order to define Taiwan's future waste disposal policy, the EPA recently invited environmental groups and academic experts to participate in the "Conference on Measures for Minimizing Municipal Wastes." The *National Environmental Protection Plan* outlines Taiwan's national goals for municipal waste management. For 2001 the goals are to reach zero growth in waste volume and a 10% recycling rate; starting from 2002, the goal is to achieve a negative growth in waste. The Plan for Reduction of Municipal Wastes - currently being drafted by the EPA - will outline initiatives targeting disposable utensils, plastic bags, polystyrene, paper boxes and cartons as well as other general consumer wastes. The plan will be sent to the Executive Yuan for approval before the end of the year.

The Director General of the EPA Bureau of Solid Waste Management stated that the concept "reduce, recycle, and reuse as the first choice; disposal as the second" is the current international trend in waste management. The Director General pointed out that Japan earlier this year passed the Measures for Promoting the Development of a Recycling Society as part of their effort to establish a society that operates on the prin-

ciples of recycling and reuse. The EPA is currently in the process of drafting the *Resource Recycling and Reuse Act* and will incorporate the spirit of the new policy into the legislation. The new Act will complement the Waste Disposal Act in establishing the framework for handling Taiwan's solid waste.

According to EPA documents, in 1999 Taiwan generated 8.56 million tons of municipal waste, a daily average of 1.082 kilograms per person. Approximately 40% of the waste generated was recyclable. Full recovery of recyclable waste would not only substantially decrease environmental loading, but would also reduce treatment and disposal costs. According to statistics, approximately 30 percent of the population (6.5 million people) eats at restaurants or out of their homes, creating an estimated 2.8 million waste lunch boxes every day. Lunch boxes are typically made of polystyrene, paper, or plastic. In addition, Taiwan also uses an estimated 3 billion plastic bags each year, creating approximately 235,000 tons of waste (based on 1998 statistics).

The Bureau of Solid Waste Management indicated that institution of a mandatory, national recycling system should only be phased in after other accompanying measures have been completed. To usher in the changes necessary, beginning next year the EPA will begin a national "contest style" program to encourage counties and cities to improve waste segregation, recycling and reuse. High performers will receive priority for EPA program subsidies. In tackling the waste habits of the general public, the EPA will begin with a campaign to encourage people to carry reusable shopping bags and reduce their use of plastic bags. ♻

Electric Scooter Subsidy Undergoing Reassessment

The EPA recently called the first and second meetings of the Electric Scooter Project Reassessment Taskforce. The EPA earlier reached a consensus with industry representatives to decide the fate of the current EPA subsidy for electric scooters over four meetings of the Taskforce to be held over a three week time span. While industry representatives strongly requested that the subsidy remain intact at its current level, Administrator Lin noted that the original subsidy policy must be explored from a number of different angles. The debate will be continued through the two remaining reassessment meetings.

After taking office Administrator Lin stated his intention to lower the current subsidy given for the purchase of electric scooters. However, the

Administrators stance drew resistance from involved enterprises and supporters of the policy. In the face of such opposition the Administrator appointed the "Electric Scooter Project Reassessment Taskforce" to reassess the current subsidy policy and produce a decision by the end of the year. The taskforce was drawn from industry, government, and academia, and will carry out the reassessment through a discussion of the functionality, future feasibility, use environment, market acceptance, and cost-benefit of electric scooters.

An academic report commissioned by the EPA revealed that the manufacture of electric scoot-

ers is very expensive, and that the average sales price falls around NT\$60,000. The current EPA subsidy for purchasing an electric scooter is around NT\$25-31,000, bringing the price down around that of a standard 50cc scooter. As of the present sales for electric scooters have not been good, this year only 4,000 were purchased. Consumer sentiment has impeded sales due to dissatisfaction with short driving range, heavy body, short battery lifespan, and inconvenient recharge common of electric scooters.

Since the government began promoting electric scooters in 1998, major manufacturers such as Sanyang, Yamaha, and Kymco, each developed their own lines of electric scooter products. To date the EPA has invested a total of NT\$700 million on the promotion of electric scooters. Although industry players have been busy results have been

lackluster, missing the EPA's subsidy goal of accounting for 2% of all new scooter sales. EPA Deputy Administrator James J. Lee emphasized that if electric scooter sales are low, from the perspective of curbing air pollution the EPA's high subsidy is receiving low returns.

Administrator Lin stated that beyond technical feasibility, the EPA must address issues of practicality, policy implementation, and public satisfaction before making a final decision, and not just one isolated benefit. As to whether the Administrator will stick with original plans to subsidize scooter sales until the end of 2002, Lin stated that there is still room for discussions. The issue will become clearer through the Taskforce's two remaining meetings and a decision forthcoming before the end of the year. 

Alternative Energy: Concept of "Virtual Power Plant" Proposed

Whether or not construction of Taiwan's fourth nuclear power plant will continue has become an international focus of attention. Some believe that insufficient diversification during development of Taiwan's energy structure has created part of the need for reliance on the Fourth Nuclear Power Plant. To address this concern Edgar Lin recently called an energy and environment conference to discuss the future of electricity development in Taiwan. Lin stated, "Energy problems are actually environmental problems, because if you are wasting energy you can't possibly be doing good on the environment. So, solving energy problems can also solve environmental problems."

On October 19 EPA Administrator Edgar Lin called experts and academics together for the "Environment and Energy Conference." Traditionally the EPA is not actively involved in energy affairs, thus when organizing the conference Administrator Lin noted that conserving electricity reduces the need to build power plants thus reducing environmental pollution. This approach falls in line with the EPA's transition from end-of-pipe pollution controls to at source pollution prevention.

The conference proceeded from improving energy efficiency and conservation to promotion and application of renewable energy and an analysis of energy use and electricity development in light of replacement plans for the Fourth Nuclear Power Plant. Administrator Lin pointed out that Taiwan is located in the subtropics but that most buildings are constructed in a way suited for living in the tropics without consideration of energy consumption problems. Relying on construction of power plants alone cannot solve energy problems. In particular, allevi-

ating peak load burdens related to air conditioning usage was never considered. For this reason the EPA has designed a household efficiency plan that could reduce peak energy consumption by 20%.

During the meeting a National Taiwan University Professor asserted that the most serious problem facing Taiwan is the continuous growth of the summer-winter peak load amplitude over the last twenty years. In 1999 the greatest discrepancy reached 5.9 million kilowatts, equivalent to twice the total capacity of the fourth nuclear power plant. Each year the peak load amplitude increases by an average of 900 thousand kilowatts. This sort of economic model, where the government builds large base load plants while allowing summer peak load consumption to grow unabated, will collapse sooner or later. As such, the only real solution is to reduce industrial and private energy use from cooling and air conditioning and alleviate the discrepancy between peak and base load usage.

During the conference, Executive Vice President of the Industrial Technology Research Institute Bob Yang (楊日昌) proposed the concept of the "virtual power plant." Raising energy efficiency, promoting application of renewable energy, and using a number other methods to conserve energy would in effect amount to creating a new power plant out of thin air. The costs associated with building this type of "virtual power plant" are far below that of building a so called "real power plant."

(continued on following page)

(continued from previous page)

The only obstacle to building the “virtual power plant,” according to Yang, is its insubstantiality, with no bids issued and no tangible end to its construction. The “virtual power plant” requires managing market side supply and demand to see to its long term maintenance. Yang stated that the “virtual power plant” must “generate” however much electricity is required by the market, but where does this electricity come from? According to Yang, “generation” comes from improving the efficiency of conservation, transmission, and management of elec-

tricity. But this is no easy task. As Yang says, “to get to the peach blossom garden you must first cross the mountains.”

Administrator Lin expressed his agreement. He pointed out that in theory and in reality, a decentralized distribution system, effective peak load management, and greater use of renewable energy are definitely doable. While difficult, Lin compared the situation to the Fourth Nuclear Power Plant. During a society's switch from an “old paradigm” to a “new paradigm” conflict will definitely arise. However, he emphasized this is merely the challenge that must be met during a paradigm shift. ●

Initial Tests of Waste Glass as Road Paving Material Successful

To help promote the recycling and reuse of waste glass, the EPA and the Public Construction Committee jointly commissioned academic institutions to begin researching the use of waste glass as a road paving material. The first stretch of road has now been laid with the new material. The agencies are now planning to prepare draft construction criteria to pave the way for the use of recycled glass in the future.

To help promote the recycling and reuse of waste glass, the EPA and the Public Construction Committee jointly commissioned National Taipei University of Technology (台北科技大學) to research and evaluate methods for reusing waste glass. Following two years of lab research and review of international experience in the area, Taiwan's first stretch of road was successfully paved using recycled glass in September in Yunlin County.

Taiwan annually generates an estimated 500,000-600,000 tons of waste glass, significantly adding to the strain on the waste disposal system. Following the establishment of the Recycling Fund Management Committee in July of 1998, the EPA developed a plan for research into technologies for the reuse of waste glass. At the end of 1998, the EPA collaborated with the Public Construction Committee to fund research into the potential uses of waste glass as a road paving material. As part of the research program, the agencies commissioned re-

search based on different ratios of glass / sand replacement. Initial results from the tests have been very positive. By the end of the year the EPA expects to complete draft construction criteria for the use of recycled glass in road-building in compliance with national standards. Following review and passage of the criteria, the EPA can begin promoting the new method, creating a new use for approximately 100,000 tons of waste glass annually.

Researchers in charge of the project noted that the reflective properties of glass make the material particularly useful. At night, glass in the road reflects car headlights making line markings in the road more visible and improving night-time road safety. The material is most suitable for use around intersections. In addition traction and drainage on the glass-asphalt road surfaces is better than that of average asphalt road surfaces. Based on foreign experiences, the value of environmental glass-asphalt road surfaces is well worth promoting widely.

In addition to promoting the use of waste glass as a paving material, the EPA also plans to convert waste glass into colored glass pebbles to decorate colored musical scores on the stages of public park concert halls by the end of the year. The EPA hopes that such uses can serve as an educational tool about recycling as well as provide a new outlet for waste glass reuse. ●

80 Uses for Toxic Chemical Substances Eliminated

The EPA currently has listed 252 substances as toxic chemicals (161 categories) and promulgated restrictions on the use of each substance to avoid damage to the environment. The EPA Bureau of Environmental Sanitation and Toxic Chemicals Control recently concluded that future toxics management would accommodate implementation directly based on the actual uses of the substance in question. In order to prevent wide-spread

overuse of toxic chemical substances, the EPA and industry have reached a consensus to eliminate certain uses for particular substances, for example the use of benzene in cleaners and paints. In total, 80 uses for 68 different types of toxic chemical substances, such as asbestos, will be eliminated.

In the process of listing the 252 substances

now regulated as toxic chemicals, review of their permitted uses was primarily based on literary sources rather than according to a review of the specific practices of domestic users. In order to avoid improper use of toxic chemical substances, the EPA Bureau of Environmental Sanitation and Toxic Chemicals Control has announced plans to eliminate any uses for listed chemicals for which no domestic user has filed an application to date. As a result, an estimated 80 specific uses will be eliminated for 68 types of toxic chemical substances, including asbestos.

On October 20, the EPA invited industry representatives and related government agencies to explain the new policy. The Bureau stated that when managed in small volumes toxic chemicals do not pose a significant environmental hazard. However, unrestricted use of popular chemicals, such as polychlorinated biphenyls (PCBs), in numerous different applications can result in widespread overuse. In the case of PCBs, because of their past widespread and

unrestricted use for coolants and insulating fluids in electric capacitors and transformers, even after being banned they continue to proliferate in the environment. To avoid a total ban on certain substances, the fate of widely used chemicals such as PCBs and DDT, restricting current use can actually ensure their long term viability.

Following several exchanges of opinions, the EPA and industry representatives reached an agreement that before the EPA lists a substance as toxic, they will consider approving current uses for existing factories (including those of factories that have completed the EIA process, but have not commenced construction). However, such approved uses are not guaranteed for future factories. The Bureau of Environmental Sanitation and Toxic Chemicals Control stated that if necessary companies can apply for new uses of toxic chemical substances. The Bureau will conduct a review every six months, and will likely approve as long as there is no risk of overuse. ♻

EPA Lists 4 Types of Insecticides Effective 2002

In the past most insecticides were not listed as environmental agents, thus the EPA lacked authority to ensure proper labeling. In October, the EPA announced that products containing 4 types of active ingredients would be listed as environmental agents. In the future any insect products containing these ingredients must apply for a permit, as well as clearly label (in Chinese) the active ingredients, warnings, proper use, and emergency steps for poisoning.

The EPA Bureau of Environmental Sanitation and Toxic Chemicals Control stated that p-dichrobenzene and naphthalene are two of the most commonly used active ingredients in insect repellants. The products come in various forms and are frequently placed in closets and on bookcases to get rid of moths and silverfish. Deet and synthetic camphor oils are commonly used in mosquito repellants. These products can irritate the eyes and nose of humans and therefore con-

stitute low to mid level toxic substances. When the concentrations of these products are sufficiently low, they do not present a serious hazard. However, if inappropriately used over a long period (such as being stored improperly), they can easily pose a chronic threat.

In accordance with the *Environmental Chemical and Biological Agents Control Act*, manufacturers and importers must obtain permission from the EPA prior to January 1, 2002 for the manufacture, distribution or sale of these four newly listed substances. Import of these products without permits will face fines of NT\$30,000-150,000 and possible prosecution. Starting from January 1, 2002, manufacturers or importers will be prosecuted for unapproved advertisement or promotion of environmental agents or insect extermination services, or if labeling is found out of compliance. Fines will range from NT\$60,000-300,000. ♻

News Briefs

Taiwan Takes a Step Forward in Eco-Diplomacy with Asian NGOs

The 5th Asian Environmental NGO Conference (APNEC 5) was held at the end of September in Agra, India. A total of 180 NGO participants from 15 countries attended the conference which has evolved into the most important environmental forum in Asia. Taiwan NGOs the Wetlands Protection Association (濕地保護聯盟) and the Foundation of Ocean Taiwan (海洋台灣基金會) attended the conference. In addition to securing Taiwan the privilege of hosting the 6th Asian Environmental NGO Conference, the steering committee also agreed to make Taiwan the lead organizer

for activities in Asia to promote "World Wetlands Day" on February 2, 2001.

EPA Holds Training Session on Hazardous Chemical Emergency Response

To help prevent hazardous chemical disasters from occurring, the EPA invited representatives of county and city Environmental Protection Bureaus, the Fire Department, and other related agencies to a training session on October 19. In total, over 100 participants joined the Hazardous Chemical Emergency Joint Committee training to improve the ability of local agencies to respond to emergency situations.

Preparation for Collection of Water Pollution Fee Begins

In 2002 the EPA will begin collecting water pollution fees from industrial generators. The EPA has begun preparing for the implementation of the new fees through continuing work with county and city governments to perform a nation-wide review of 23,000 industrial facilities and sewer discharge facilities. The review will allow the EPA to prepare comprehensive data on the overall state of wastewater discharge by commercial operations in Taiwan.

EPA Administrator Edgar Lin recently stated that the EPA will begin levying the long-delayed water pollution fee in the year 2002. Fees collected will be used to support river remediation work. Administrator Lin stated that the levying of water pollution fees derives its legislative basis from the "polluter pays" principle. Despite the fact that the EPA had previously announced (but not promulgated) regulations regarding the system for collecting fees, Administrator Lin has decided to only levy the fee against industrial generators and exempt households to avoid placing too much of burden on the public. The Bureau of Water Quality Protection has been asked to develop an appropriate implementation plan.

Officials from the Bureau of Water Quality Protection stated that the first step in levying the new water pollution fee will be to conduct a complete review of the wastewater discharge patterns of industrial generators. However, given the fact that there are 23,000 generators, conducting the review will

be a challenging task. The EPA will request all industrial wastewater generators to report their basic information to the EPA, including: company size, wastewater volume and characteristics; wastewater treatment equipment, and other relevant data. The review will allow the EPA opportunity to overhaul its wastewater management system. The Bureau of Water Quality Protection stated that comprehensive review of industrial discharge patterns is a fundamental and ongoing function of wastewater management, and is required by the EPA to fulfill its legal mandate.

The Bureau of Water Quality Protection has commissioned China Technical Consultants Inc (CTCI) to prepare a detailed review checklist and has also requested that each city and county government inform local industry about the review process. The Bureau of Water Quality Protection emphasized that the review is an opportunity for companies to "come clean" and supplement missing information to avoid future charges of violating the *Water Pollution Control Act* by failing to report properly.

In considering the use of the fees collected, some legislators felt that using the fees for sewer construction was not reasonable and were considering revising the *Water Pollution Control Act*. Administrator Lin also stated that any funds collected would be earmarked for remediation of rivers such as the Erhjen or the Kaoping Rivers. 

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

Publisher

Dr. Edgar Lin, Administrator,
Environmental Protection Administration

Editor-in-Chief

Dr. Chea-Yuan Young, Director General,
Office of Science and Technology Advisors
Environmental Protection Administration

Editors

Dr. Y.F. Liang, Dr. Shawn Chang,
Lee-Kuo Hsiao, Bruce Berkman

Editorial and translation support provided by:

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

The EPM is available free of charge on the EPA website (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

Contents Copyright 1999.

No part of this publication may be reprinted without written permission from the Publisher.

行政院新聞局出版登記證局版北市誌字第壹陸壹號
中華郵政北台字第6128號執照登記為雜誌交寄