



Environmental Policy Monthly

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

Feature Column

Green Opportunities through Development of Alternative Fuels

Following joint promotion by the Bureau of Energy, MOEA, and the EPA, Taiwan has begun trialing the use of biofuels in vehicles. The long-term objective is to gradually supply all domestic energy needs so that citizens are able to consume an everlasting source of clean and renewable green fuels.

With greenhouse gas reductions in the global spotlight, energy conservation and energy efficiency are important steps toward reducing greenhouse gases. Looking at Taiwan's energy policy, it can be seen that very little energy is produced domestically - Taiwan imports 99.32% of its energy. The search for green energy and fuel has thus become an important issue for government agencies and private suppliers.

Searching for Alternative Energy to Replace Fossil Fuels

Green energy refers to renewable energy and technologies that save energy and enhance energy efficiency. Unlike non-renewable energy sources such as coal, petroleum, natural gas and uranium, green energy means everlasting sources of energy that

can be found in the natural environment. As natural resources become depleted and energy demand increases, our only option is to seek alternative energy sources. New generation energy sources should be able to provide our energy needs without polluting the environment. They must also be sustainable energy sources that can be obtained indefinitely, including solar energy, biofuels, ocean currents, wind power and hydropower.

Bioenergy refers to the energy stored within organic material that can be processed into gases, alcohols or oils (i.e., methane from landfills) and used to generate electricity. For example, alcohols can be derived from corn and sugar cane and biodiesel fuel can be made from the oils of sunflowers, soybeans, canola and waste cooking oil. However, there is a cause for concern when grain producing nations upset global

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food distribution by converting corn and soybeans into alternative energy sources.

All Gas Filling Stations Now Offer B1 Biodiesel

The government is actively undertaking various biofuel technology development and encouraging the use of biofuels to replace fossil fuels. Article 38~1 of the Petroleum Management Act (石油管理法) stipulates timelines, scope and methods for promoting sales of domestic gas and diesel. The Act also stipulates certain proportions for mixtures of alcohols and esters.

The promotion of domestic biofuels started in October 2006 with the Executive Yuan's "Development of Green Energy- Biofuel Promotion and Implementation Plan." This included plans for promoting biodiesel and bioethanol through demonstration strategies to gradually achieve universal use and eventually support the domestic bioenergy industry. This was the primary objective of the Green County Plan launched in July 2007.

The EPA allocates NT\$100 million each year for the Biodiesel Road-Test Plan, and has subsidized 13 counties and cities since the last half of 2004. The EPA also subsidized nine counties and cities in 2008 to carry out biodiesel trial plans and encourage prioritization of the use of B1 biodiesel in garbage and recycling trucks.

By 15 July 2008, the government mandated the addition of 1% biodiesel to all diesel fuel on the market. A grace period of three months was given to adjust to this measure. Two of the nation's largest producers of diesel for vehicle use complied to this national standard and by 29 September 2007, eight gas stations in Taipei City had begun using E3 ethanol-gasoline. Kaohsiung City gas stations will trial the use of E3 ethanol-gasoline in 2009.

Renewable Energy Limited, More Time Required for Full-scale Promotion

Although there is plenty of energy available in the natural world, many problems arise in promoting the use of some energy resources. Alternative energy exists in different forms and engineering technology is required to transform the energy of the sun, wind, waves and the Earth's core into a form that can be used by humans.

Solar energy is not yet universal due to the difficulties of economically obtaining and storing solar energy in large quantities. While wind power is also a renewable energy, large turbines are an eyesore and have an impact on the environment. Other shortcomings include devaluation of land due to noise generated by wind turbines, and inability to generate power during times of excess or insufficient wind. Each type of energy has its advantages and disadvantages, the latter of which are gradually being overcome by the



► Straw is collected for incineration to make use of heat energy and reduce air pollution from open burning

energy industry in hopes of attaining greater energy efficiency.

One of the largest problems in promoting the use of biodiesel is the high costs. Processing of vegetable oils into biodiesel costs far more than making diesel fuel from petroleum. When recycled cooking oil is used as a raw material there is still no way to meet the demand. The Council of Agriculture has considered providing guidance to farmers to use fallow or waste land for the cultivation of "energy crops" to solve the problem of unused farmland and increase the domestic production of bioenergy.

The EPA is now considering how to make the best use of waste materials by turning them into energy resources. Trials are now being run in cooperation with China Steel's Dalin Plant in Kaohsiung, encouraging nearby farms to send their rice straw to the incinerators for fuel. This not only reduces air pollution caused by open burning of rice straw, but also makes best use of incinerators and provides another form of renewable heat energy. Cooperation plans with local governments to recycle waste cooking oil are still underway in hopes of providing enough waste cooking oil for biofuel production in the future.

Complementing Taiwan's Energy Management Act (能源管理法) and Taiwan's energy policy, the government has already established the Energy Research and Development Fund. The Energy Management Act stipulates that this fund should be used for developing energy resources, researching energy-saving technology and training personnel. Goals set for 2020 include cutting back energy consumption by 28% and increasing Taiwan's renewable energy supply to 3%.

Taiwan began making short-, mid-, and long-term plans for renewable energy in 1999, including solar heating, photovoltaics, microhydro, wind power, geothermal, bioenergy (ethanol-gasoline, biodiesel, energy crops, forest and bio-hydrogen), and ocean thermal energy. Energy from waste is also being developed including agricultural waste, industrial waste and municipal waste. It is anticipated that by 2020, these renewable energies will make up 3% of Taiwan's total energy needs. Other countries have similar goals: Japan aims to reach 3.1% by 2010; the U.K. plans to increase from its current percentage of 0.25% to 10% by 2010; and Denmark aims for 17~19% by 2010 and 35% by 2030. Although Taiwan's goal is only 3%, it will take cooperation and effort of many fields to achieve this goal.

Goal: 3% Renewable Energy by 2020



▶ All counties and cities are now recycling waste cooking oil



▶ Garbage trucks collect waste cooking oil in a separate bin for recycling

Air Quality

Executive Yuan Approves Draft Indoor Air Quality Management Act

The Indoor Air Quality Management Act (室內空氣品質管理法) (draft) was approved by the Executive Yuan on 9 October 2008 and sent to the Legislative Yuan for review on 15 October 2008. This legislation facilitates the

promotion of indoor air quality maintenance and management. This marks an important milestone for redirecting the focus of air pollution controls from outdoor air quality to indoor air quality.

The EPA indicates that most people in Taiwan spend about 90% of their time indoors. The indoor air quality therefore has a direct influence on human health. In recent years more people have come to place more importance on indoor air pollution. To further protect citizens' health and improve indoor air quality, the EPA drafted the Indoor Air Quality Management Act (室內空氣品質管理法)

Indoor environments range from closed to semi-closed spaces such as offices, theatres, restaurants, department stores, hospitals, and even cars, boats, and planes. Many different pollution sources are continuously or intermittently emitted in both indoor and outdoor environments. Poor air circulation causes pollutants to accumulate in closed spaces and harm human health.

Research in recent years points to the following problems in domestic indoor air quality:

1. Public premises where employees work indoors are too closed off, air conditioning equipment is inadequate and air is not adequately circulated. These factors contribute to poor circulation resulting in excessive levels of CO₂.
2. Excessive interior decoration of indoor spaces leads to exposure of VOCs in materials such as glues. This is exacerbated in buildings with poor air circulation and causes increased concentrations of indoor volatile pollutants, especially formaldehyde and TVOC.

3. Taiwan's subtropical climate has an average humidity of over 80%. The external environment is therefore a hotbed for the development of biological pollutants and shows consistently high concentrations of organic pollutants such as bacteria and fungi.

The EPA indicates that in order to get public premises to take indoor air quality seriously and make effective improvements, the draft Indoor Air Quality Management Act approved by the Executive Yuan stipulates indoor air quality standards for premises designated by the EPA. Environmental agencies can conduct unscheduled inspections and request those not abiding by standards to make improvements before a given deadline. Failure to make improvements will result in a fine ranging from NT\$50,000 to NT\$250,000.

While making improvements, public premises will be required to let people know about air quality by posting a notice in an obvious place near the entrance announcing that indoor air quality does not accord with standards and is currently undergoing improvements. For large public buildings that contain many people, have a high rate of use, or have particular air quality requirements, automatic monitoring equipment must be installed to continuously monitor indoor air quality. Monitoring results should be instantly displayed in an obvious location at the entrance of the building.

For more information please call 02-23117722 ext. 2760.

Climate Change

TFT-LCD Voluntary Emission Reductions Surpass Japan and Korea

While Taiwan's rapidly developing LCD monitor industry is behind Japan and Korea in terms of production value, output and other economic indicators, it is taking the lead ahead of these countries in terms of greenhouse gas reductions.

The EPA indicates that since 2004 it has worked with the Taiwan Thin Film Transistor and Liquid Crystal Display Association (TTLA) to coordinate voluntary emission reductions. After several meetings,

TTLA took the lead by signing a memorandum of cooperation with the EPA on 27 August 2008 regarding the reduction of perfluorinated compounds (PFCs).

After four years of investing nearly NT\$2 billion, this has led to a 70% decrease in emission intensity (metric tonnes carbon equivalent per square meter, MTCE/m²) (Figure). PFC removal equipment has been installed on 80% of emission sources, a rate much higher than that of Japan and Korea (70% and 10%, respectively). This is expected to reduce 19 million tonnes of CO₂ equivalent emissions. The EPA calls on other domestic industries to follow suit early on in order to achieve a win-win situation for the economy and the environment.

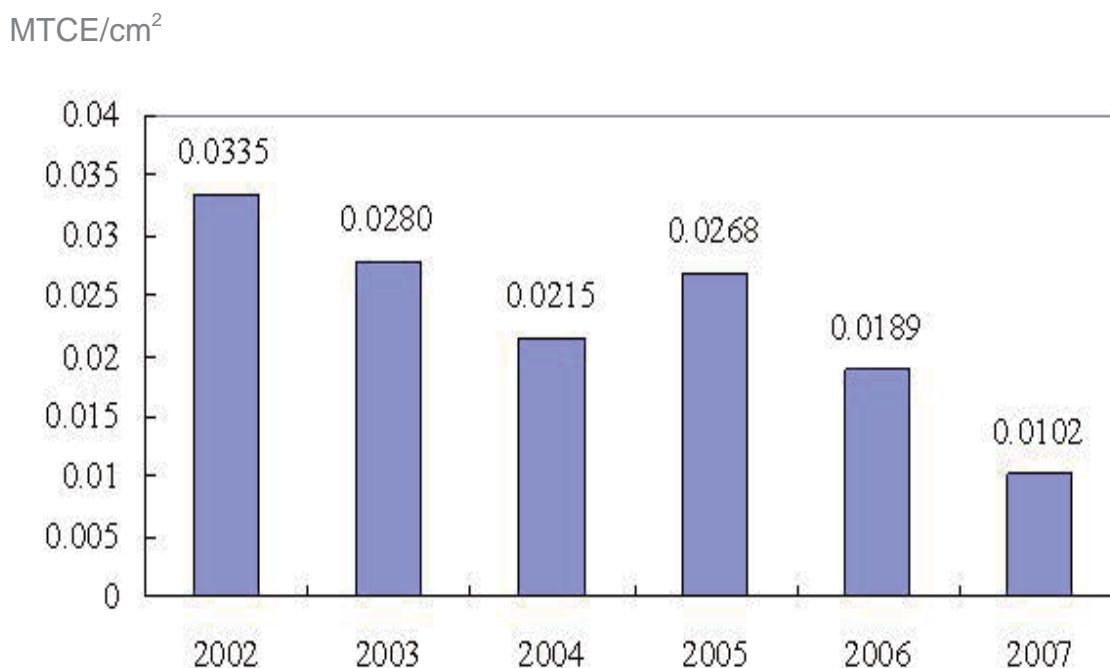
Fluorinated greenhouse gases are regulated under the Kyoto Protocol. Currently the main domestic industries emitting these greenhouse gases are optoelectronics and semiconductor industries. While these industries account for only 3% of the national total, these chemicals are 5,700 to 11,900 times more effective than CO₂ in influencing the greenhouse effect. The EPA is therefore actively promoting reductions of these gases as a priority.

The EPA indicates that on 27 August 2008, the TTLA took the lead in signing a memorandum of cooperation with the EPA to reduce PFC emissions. All TTLA member factories promised to achieve reduction targets by adding equipment to new factories and

reduce overall industry greenhouse gas emissions. Industries are taking initiatives to promote related energy conservation and carbon reduction measures, for example, "AUO Green Solutions," or Chimei's plan to provide free shuttle service for employees and plant over 20,000 trees in its industrial park. These measures not only mark the first industrial association to sign a greenhouse gas reduction agreement with the government, but also is the first instance of a WLICC member to do so. This is a great example for international reference.

According to results announced in September 2008, eight of the TTLA member companies had invested nearly NT\$2 billion by the end of 2007 on PFC reduction work including raising energy efficiency, adjusting equipment, using alternative products, and installing pollutant removal equipment. Another NT\$20 million is spent annually to maintain this equipment. These measures have decreased emission intensity (MTCE/m²) by 70%. Already 80% of facilities have installed PFC removal equipment. This is much higher than counterparts in Japan and Korea, with installation rates of 70% and 10%, respectively. TTLA states that this equipment reduces up to 19 million tonnes of CO₂ equivalent emissions, showing that energy intensity has been decreasing over the years.

▶ *Figure: Declining PFC emission intensity over the years among TTLA members including AUO, Chunghwa Picture Tubes, HannStar, Prime View International, Chimei, TPO Displays, Wintek, and InnoLux Display Corp*



The EPA states that the Greenhouse Gas Reduction Act (draft) (溫室氣體減量法) has not yet been reviewed by the Legislative Yuan. Before the Act is promulgated, Taiwan's primarily export based industry must face international carbon disclosure trends for supply chains. Domestic industries not only need to understand international information in order to make a response, but also need to prioritize emissions inventories and registration to stay on top of their own emissions and establish a base from which carbon

reductions can be made. Currently TTLA has already taken the initiative to complement the EPA in carrying out greenhouse gas inventories and voluntary reductions. Emission data verification work carried out from late 2006 to 2007 is slated for completion this year (2008). Working on the successful example of voluntary reductions made by this industry provides a response to international demands as well as an opportunity for the future low-carbon economy.

Recycling

Waste Mobile Phone Rechargers Listed as Mandatory Recyclable

The EPA has added waste mobile phone rechargers to the list of mandatory recyclables to solve related waste disposal problems. Citizens are asked to hand their old mobile phone rechargers to local recycling truck.

Bought a new mobile phone and don't know what to do with your old recharger? On 30 October 2008, the EPA announced revisions to the list of mandatory recyclables, listing mobile phone rechargers as "resources." Effective immediately, any unwanted mobile phone rechargers (including stationary and travel types) should be sorted as "resources" and given to the recyclables collection crew. These devices should not be put in the garbage truck and anyone found doing so after already receiving instruction to not do so will be fined from NT\$1,200 to NT\$6,000.

From May 2006 to August 2008, the nation generated 472 tonnes of waste mobile phones, equivalent to 3.08 million mobile phones. Mobile phone manufacturers produce many different types of rechargers including stationary and travel styles; these devices are usually no longer useful when people switch to newer mobile

phones. This has given rise to increasing quantities of this waste item. Rechargers have a high reuse value and can be dismantled along with mobile phones, making it easy for both mobile phones and their rechargers to be handed over to recycling collection crews at the same time. To raise awareness, the EPA has specifically added this item to the list of mandatory recyclables.

As mobile phone rechargers are a new item on the list of recyclable, the EPA indicated that citizens may not be aware of the new regulations at the outset. Local environmental protection bureaus are spreading the news and asking those who fail to sort rechargers along with recyclables to sort the item on the spot and give to the recycling truck. The few people unwilling to cooperate will be subject to investigation and penalization.

Waste Management

Encouraging Private Composting of Food Waste

After eight years of promoting food waste recycling, now the nation recycles enough food waste equivalent to the volume of waste processed daily in two 900-tonne incineration plants. The EPA is seeking cooperation with private compost treatment facilities and professionals that use specialized composting technology to process food waste into high quality organic compost.

The EPA began promoting the recycling of food waste since 2001 with outstanding results. The daily volume of collected food waste has risen from 80 tonnes to 1,917 tonnes, equivalent to the amount of

waste processed each day in two 900-tonne municipal waste incinerators. To accelerate the promotion of food waste recycling and solve the problem of finding uses for organic compost made from food waste,

the EPA is actively soliciting existing private compost treatment facilities with extra treatment capacity and specialized composting technology. Use of these services is expected to reduce the government's investment in building food waste composting plants and related operating costs.

Of the methods used to treat food waste, about 75% undergoes steam treatment to make pig feed, while 24% enters composting systems and 1% undergoes other processes. Composting is used for food waste unsuitable for feeding to pigs such as nut shells, clam shells, durian fruit shells, as well as various other organic matter including slashed vegetation and branches. Most of these materials are mixed together with garbage and sent to the incineration plants. However, zero food waste can be achieved if

decomposition processes are employed to turn these materials into compost, which can be used to beautify our environment and grow fruit trees.

The EPA has announced it will select one private company with treatment equipment and capability to enter a joint supply contract with the EPA to recycle food waste and organic matter. The EPA will provide 2,000 tonnes of compostable food waste from each county and city to the contracted business for treatment. This will not only help local governments recycle food waste, but this cooperation model will also encourage the private sector to invest more technological and marketing resources to transform the nation's recycled food waste into resources in the form of top quality compost that conforms to specifications for fertilizer products.

Environmental Inspection

Cross-Regional Transit of Waste under Probe

The EPA has been promoting cross-regional transit and treatment of waste to ensure full cooperation between counties and cities. Related agencies are currently working together to carry out random inspections that will prevent clearance companies from mixing in industrial waste during the transit.

To solve county and city waste treatment problems and actively promote regional cooperation in waste treatment, the EPA is assisting the establishment of cross-regional garbage transfer and treatment models between different counties and cities. The EPA indicates that cross-regional transfer of waste involves either collection and clearance by local governments or commissioning the transfer of waste by another contractor. To prevent commissioned clearance enterprises from adding industrial waste during transit, the EPA has drawn up an inspection plan calling for the Bureau of Environmental Inspection to dispatch regional units and the Ministry of the Interior Environmental Police Force to carry out random inspections.

Among the local governments that currently commission qualified clearance organizations to transfer waste to incineration plants in other counties or cities include Wuxiang City in Hualien County's Northern District, Hsinchu County, Nantou County, Taichung County's Lishan region, Douliu City and Hsiluo Township in Yunlin County, Liuchiu Township in Pingtung County, and Penghu County. These counties and cities pay fees to clearance enterprises according

to the actual volume of waste that undergoes transfer. Incineration fees are directly paid to county and city governments with incineration plants.

The EPA indicates that current inspections focus on whether the licensed or approved clearance vehicles are used to transport waste, whether industrial waste is present before loading waste vehicles, or added during transport, whether clearance vehicles have the necessary work safety warning system and leak prevention functions, as well as whether vehicles pollute the road surface with uncontained garbage or leaks while driving. From July 2008 to September 2008, the Environmental Inspection Force and regional teams and Ministry of the Interior Environmental Police Unit jointly conducted 87 random inspections. Errors were discovered in 31 cases and local governments were requested to make improvements. Violations were discovered in 2 cases.

On 8 October 2008, the EPA convened an inspection plan review meeting during which it was emphasized that cooperation of cross-regional waste treatment depends on county and city governments to cooperate with the EPA's strict standards and strengthen

supervisory work.

General Policy

Minister Shen Signs Energy Conservation, Carbon Reduction Declaration with Cyclists

EPA Minister Stephen S.H. Shen met with the Hoseng cycling group from Tainan County on 13 October 2008 and signed an energy conservation and carbon reduction declaration with a group of eight cyclists that had just embarked on a round-the-island trip. Items on the declaration included: sealing air conditioned spaces, turning off lights and unplugging appliances, using energy saving lamps, buying products with energy- and water-saving labels, biking and walking, not driving a car one day a week, keeping carbon reduction in mind when selecting and using vehicles, eating more vegetables and less meat, cherishing resources, and bringing your own chopsticks, handkerchiefs, and bags.

The eight cyclists in this group commenced their tour on October 10 at Yongkang City, Tainan County. They followed Route 1 north and arrived in Taipei on October 12 to ride the Tamshui River route. After meeting with Minister Shen on October 13, they proceeded along the northeast coastal highway to Yilan. They then planned to ride through Hualien and the Huadong Valley, the Southern Cross-Island Highway, before finally making their way back to Tainan on October 17. Their entire route is over 1,000 km long.

Minister Shen greatly admired the determination of the eight cyclists and after signing the energy conservation and carbon reduction declaration, he handed a banner to the cyclists to commemorate their environmental efforts.

Planner and participant of this bike trip, Tainan County EPB Deputy Director Hou Jun-yan (侯俊彦), was diagnosed three years ago with third-stage colon cancer. Since then he has made a great recovery, revealing that this trip made him more determined to fight cancer. In preparation for this trip, he cycled three times a week to build up stamina for half a year. He stated that the only way to truly comprehend the beauty of Taiwan is through firsthand experience, which gave him a profound connection with the spirit of the people of Taiwan. This trip was one of Hou's lifelong dreams, and he encourages others to chase their dreams. The cycling team was named "Hoseng," meaning "fun" in Taiwanese. Two elementary students joined the team's trip around Taiwan with full support of their parents.



▶ EPA Minister Shen (center) meets with the cycling team

Recycling

Hualien ESTP Commences Operations

The EPA's four Environmental Science and Technology Parks (ESTPs) are coming into operation to support domestic environmental industries and promote the recycling of domestic resources. In the wake of the inauguration of the Kaohsiung ESTP, the Hualien ESTP is now ready to commence operations. The Hualien ESTP will be based on integrating the development of local resources with local specialty industries.

The EPA has been bolstering Taiwan's Environmental Science and Technology Parks (ESTPs) for many years, introducing high tech operations and talents, providing employment opportunities and attracting private investment. At the same time it has paid special attention to links with nearby events. ESTP local competent authorities have promoted ecological infrastructure nearby in their counties and cities to provide opportunities for industry to integrate with the local ecosystem and strike an ideal balance between production, life and ecology.

The Hualien ESTP is one of four parks established by the EPA. The Hualien government took into consideration the balanced development of the region as well as comprehensive facilities within the park. The Fenglin Industrial Integrated Development Park was chosen as the ideal site for the ESTP, covering about 22 hectares with an existing emphasis on local resource development and integration with local industries. This serves as the foundation for the development of the park, drawing on technical support and the introduction of talents to push the advancement of local industry. The main industries here focus on biotechnology, bioenergy and IT software, and are expected to attract private

investment of about NT\$4 billion and employ over a thousand people.

Construction of the Hualien ESTP began on 14 July 2005. Despite several natural disasters that slowed down construction progress, the Hualien County government kept up efforts to ensure the park would open by 21 October 2008. Apart from the beautiful natural surroundings, the park's management and research building is another attraction, standing three stories high and certified as a green building. The building contains an environmental education display area, an international meeting center, a factory exhibit space and classrooms for training. The environmental education display area for exhibiting various pollution control technology and the environmental initiatives of factories within the park. This space is regarded as a bridge for interaction between industry, government, academia, and citizens concerning environmental education. It also brings home the idea that environmental protection is part of everyone's everyday life.

Companies located within ESTPs will enjoy various benefits and services from the EPA and local governments. Interested businesses are welcome to address inquiries to the ESTP recruitment hotline at (02) 2381-5784.

EIA

EIA Case Reviews: CPC Sanching and Hsibin-Yuanlin Road

The EPA convened the 171st Environmental Impact Assessment Committee (EIAC) meeting on 8 October 2008 to review two cases: "The Environmental Impact Statement of the China Petroleum Corporation Sanching Renewal Plan" (台灣中油股份有限公司三輕更新計畫) and "The Environmental Impact Statement of Updated Plans for Construction of the Hsibin Highway (Route 61) from Yuanlin Drainage to Hsibin Bridge." 西濱快速公路(台61線)員林大排至西濱大橋新建工程) It was decided that the CPC Sanching case would be relegated to another review meeting convened by an EIA case committee. The highway construction case was conditionally approved.

The China Petroleum Corporation Sanching renewal plan for its third naphtha cracker in Kaohsiung County's Linyuan Township (林園鄉) had already undergone four preliminary meetings by an

EIA case committee. At the fourth meeting, it was suggested that the EIA be conditionally approved and brought to the EIAC for discussion. After EIAC members thoroughly discussed the concerns of related organizations and local residents attending the meeting, differing views of the committee members precluded consensus and a majority vote was in favor of relegating the case back to the EIA case committee. The case was relegated to a different case committee which would convene a preliminary meeting to make a decision.

The proposed road construction between Yuanlin drainage and Hsibin Bridge borders an important conservation area for bird habitat. After three EIA case committee review meetings to discuss details, it was put before the EIAC for review on 8 October 2008. After thorough discussion, consensus was reached to conditionally approve the plan provided the developers carry out the following measures:

1. Comprehensive countermeasures should be carried out to reduce disturbance to conservation species: Eurasian Curlew, Saunder's Gull and Black-Winged Kite.
2. Construction should be suspended on section 201~208K during the migration period of the Eurasian Curlew from December to February.
3. Feasibility of the alternative plan for section 201~208K should be assessed, and 700 meters on both sides of this section should be reserved to facilitate the decision of an alternative plan. The alternative plan should assess the feasibility of setting the road back at least 300 meters inland from the original route and using semi-covered noise barriers. Assessment results should be sent to the EIAC for review before construction begins.
4. Road design should consider surface runoff and local hydrology systems to prevent damage to freshwater wetlands.
5. Before construction begins, the developer should draft an environmental protection executive plan for construction based on environmental impact statement content and review conclusions, and record costs needed for carrying out environmental protection work. Subcontracts should be included in the main construction contract. The developer should send plans and contracts to the EPA for review before construction begins. The EPA will authorize the Changhua County government to establish an environmental assessment supervisory group to ensure future developers make good on their environmental promises.

Recycling

Lead Battery Recycling Rate Over 70%

Taiwan currently recycles about 45,000 tonnes of lead batteries per year for a recycling rate of over 70%. The multiple functions of lead make it hard to replace with other materials. Lead batteries enjoy the highest recycling and reuse rates among consumables in all the world's countries. The EPA emphasizes the importance of getting industries to recycle lead batteries.

Everyone knows its time to take your vehicle into the shop when your battery doesn't have enough juice to start the engine. But not everyone knows that lead batteries are a mandatory recyclable waste.

The EPA explains that waste lead batteries are on the list of regulated hazardous waste items in the Basel Convention due to the harmful nature of lead. Early on in 1997, the EPA announced lead batteries as a mandatory recyclable waste. According to EPA statistics, each year Taiwan recycles 45,000 tonnes of lead batteries for a recycling rate of over 70%. The main sources of batteries for recycling are motor vehicle repair factories, vehicle wreckers,

factories, automobile electronics repair factories and lead battery retailers. Recycling and treatment is carried out by local government sanitation crews and qualified waste lead battery recyclers. After batteries are collected they are sent to domestic registered treatment enterprises to ensure all materials are recycled.

The EPA explains that although lead is a hazardous substance, the lead in waste lead batteries is the main source of recycled lead. Recycled lead fetches a high price and is highly reusable. Lead is resistant to acid, wind erosion and prevents energy rays and noise; these multiple functions make it hard to replace. This

is one reason why lead batteries enjoy the highest recycling and reuse rates among consumables in all the world's countries.

The EPA reminds people that waste lead batteries fetch a high price for recycling, and in order to prevent the hazards of lead on the environment and human

health, it is urgent that lead batteries are recycled. Recycling and treatment is currently carried out by local government sanitation crews and qualified waste lead battery recyclers. Inquiries about the recycling of lead batteries can be directed to the recycling hotline at 0800-085717.

News Briefs

Two Gas Stations Pronounced Soil and Groundwater Remediation Sites

On 16 October 2008, the EPA announced the Donglin Gas Station (Luzhu Township, Taoyuan County) and the Changrong Rd. Gas Station (Sinying City, Tainan County) as soil and groundwater remediation sites. These mark the eleventh and twelfth gas stations to be listed as soil and groundwater remediation sites. The EPA indicates that the soil and groundwater at these two sites contain benzene concentrations in excess of control standards. The land will be prohibited by law from re-registration and rights may not be transferred until the polluters complete all remediation work and the site is removed from the list. The EPA stated that it will require the businesses to propose detailed soil and groundwater survey and assessment plans as well as propose a remediation plan based on these results. For more information, please call 02-23832389 ext. 800.

EPA Working to Reduce Pollution of the Yanshui River

Water quality of the Chianan Canal (嘉南大圳) is seriously degraded, affected by heavy pollution flowing in from the Yanshui Creak (鹽水溪). After flowing into Tainan City, the river is subject to even more pollution as the effluent of Heshun Industrial Park in the Annan District directly enters the flow. In 2005, the EPA worked with Yanshui Creak pollution control and targeted the effluent of highly polluting industries (electroplating and metal surfacing industries) as a focus of supervision, inspection and controls. Inspections and enforcement was actively carried out and the EPA's Southern Branch Bureau of Environmental Inspection conducted 203 factory inspections from January to September 2008. A total of 57 factories were found breaking environmental regulations, five of which were ordered to suspend operations and two of which were prosecuted for violations of the Water Pollution Control Act. Following this

period of active control measures, the extent of water pollution is diminishing and water quality is improving. Citizens are encouraged to immediately report signs of pollution to the local environmental protection bureau or the EPA (report hotline: 0800-066666), upon which personnel will immediately be dispatched to investigate and stop the source of pollution.

Recycling Subsidy Deadline Approaches

On 7 December 2007, the EPA promulgated revisions to the Recyclable Waste Subsidy Application Review Regulations (應回收廢棄物回收清除處理補貼申請審核管理辦法), requiring mandatory recyclable treatment plants to raise their resource recycling rates or hazardous substances removal rates to a certain level before they are eligible to receive clearance and treatment subsidies. Businesses that had already received such subsidies before the revision was enacted were required to reapply for the subsidy by the end of 2008. Failure to apply will result in forfeiture of eligibility to receive the subsidy.

The EPA stated that businesses engaged in recycling or processing mandatory recyclables that exceed a certain scale restriction should register according to the Management Regulations for Recycling Enterprises Handling Recyclable Waste (應回收廢棄物回收處理業管理辦法) and apply for an extension every five years to ensure appropriate management. Those wishing to receive assistance can apply for a subsidy by providing information showing they comply with subsidization requirements. By 30 September 2008, a total of 381 businesses were expected to reapply for subsidies by the end of the year. Of these, 116 have submitted applications and 113 have already been approved by the EPA. However, the remaining 215 have not filed their applications. These businesses are reminded to heed this application deadline to avoid missing out on these benefits.

Activities

Deputy Minister Chiau Speaks at Climate Change Seminar

EPA Deputy Minister Chiau Wen-Yan (邱文彥) accepted an invitation to attend the The 23rd Pacific Economic Community Seminar on "Climate Change and Green

Opportunities: Business, Society, and Cooperation" on 7 October 2008. Chiau delivered a special topic speech on the direction of Taiwan's energy conservation and carbon reduction policies, taking the opportunity to inform experts and scholars from Canada, China, Korea, Japan, Singapore and Australia about Taiwan'

s climate change response strategies and concrete actions.



▶ An industry representative explains how lamps are recycled

Promoting Community Recycling of Batteries and Lamps

The EPA continues to promote nationwide environmental agencies and their volunteers to promote recycling. In October they held a "Battery and Lamp Community Resource Recycling Demonstration Briefing" in central, southern and eastern Taiwan. The participation of community volunteers helps the EPA promote recycling and get citizens into environmental habits.

The EPA provided guidance and encouragement to community volunteers engaged in promoting recycling by leading outreach model briefing in northern Taiwan in late September. During this event, six environmental protection bureaus in northern Taiwan were invited along with their local volunteers for a total of eighty people. Communities with outstanding recycling performance were invited to share their experience. Battery treatment plants Jhihpeng Technology Ltd. Co. and Yanlong Resource Technology Ltd. Co., and a waste lamp treatment factory and recycled lamp manufacturer Zhongtai Resource Technology Ltd. Co. were invited to show the methods and processes by which they appropriately treat and recycle waste lamps.

Guishan Island Community Sets Example of Environmental Cleanliness

Guishan Island Borough is located on the coast across from Guishan Island in Toucheng Township. Residents of this community were relocated from their former homes on Guishan Island decades ago. Greening and beautification have transformed this traditional fishing village into a clean community with a strong sense of environmental awareness. Guishan Island Community Development Association applied with the EPA to get their community environmental reform plan approved, and obtained NT\$290,000 to clean up unkempt spots and maintain a clean environment. The community first mobilized to clean up the trash and haul it away in a truck. Earthworks were then carried out and a lawn was installed to create a small green park that is so green and beautiful that no one litters anymore. The community is quite active and formed a patrol team in response to dumping of garbage in the nearby stream. This team patrols two natural streams and maintains the residential environment to enhance the quality of life here.



▶ Before and after pictures of Guishan Island Community in Toucheng Township, Yilan County

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