December 31, 2010

Environmental Policy Monthly

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

Feature Article

Incinerator Ash Treatment and Reuse

The need to prevent secondary pollution during treatment of bottom ash and fly ash from refuse incinerators is an important environmental issue. Taiwan has developed advanced methods for treating and reusing incinerator bottom residue, and draws upon the experiences of other developed nations in promoting the reuse of such ash in building materials. An interagency mechanism is being set up to promote the establishment of a comprehensive management system for the reuse of the ash.

During the process of refuse incineration the ash discharged from the bottom of the incinerator is known as bottom ash, whereas the dust and ash collected in the filters and exhaust system is known as fly ash. The proportion of bottom ash generated is 15~20% of the total volume of trash incinerated; the proportion of fly ash generated is 3~8% of the total trash. Taiwan's 24 municipal waste incinerators currently generate about 940,000 tonnes of bottom ash and 260,000 tonnes of stabilized fly ash per year.

Bottom Ash Reuse Rate Reaches 63% Due to Thorough Processing

1. Bottom Ash

The main features of the "Municipal Waste Incinerator Bottom Ash Reuse and Management Methods" are as follows:

Reuse conditions: Before being reused bottom ash must be sieved, pulverized or separated in filters. Depending upon the category of product that the reused ash will be used for, it must also be stabilized, heated, or rinsed with water. After undergoing pre-treatment, the bottom ash is then subjected to the Toxic Characteristic Leaching Procedure (TCLP) and Dioxin Toxic Equivalent (TEQ) testing to ensure dioxins levels are below the maximums permitted by the Standards for Defining Hazardous Industrial Waste (有害事業廢棄物認定標準).

In This Issue

Categories of reusable products and testing procedures: After pretreatment, bottom ash can be used in three categories of reusable products. The quality standards and uses for these three product categories are shown in Table 1.

Regulations governing usage sites: The reusable bottom ash cannot be used in drinking water source protected areas, within set distances from drinking water sources, in reservoir catchment areas, or in tap

Table 1: Quality standards and uses of Taiwan's bottom ash products Category

Category / Quality Standard		Category 1	Category 2	Category 3
TCLP	Total lead (mg/L)	≦5.0		
	Total cadmium (mg/L)	≦1.0		
	Total chromium (mg/L)	≦5.0		
	Total selenium (mg/L)	≦1.0		
	Total copper (mg/L)	≦15.0		
	Total barium (mg/L)	≦100.0		
	Hexavalent chromium (mg/L)	≦0.25	≦0.25	≦2.5
	Total arsenic (mg/L)	≦0.50	≦0.50	≦5.0
	Total mercury (mg/L)	≦0.02	≦0.02	≦0.2
Volume of water-soluble chloride ions (%)		≦0.024		
Dioxin TEQ (ng I-TEQ/g)		≦0.1	≦0.1	≦1.0
Uses		Coarse aggregate subbase, foundation and road fill, CLSM, concrete aggregate, asphalt concrete aggregate, brick aggregate, some other uses	Coarse aggregate subbase, foundation and road fill, CLSM, aggregate for non-reinforced concrete, asphalt concrete aggregate, brick aggregate	Only suitable for foundation and road fill. Must be used in quantities of 10,000 tonnes or more. Plans detailing isolation, control and monitoring of bottom ash products must be approved by the EPA before use.

water source quality and quantity protected areas. At all other sites the reusable ash can only be employed at least one meter above existing groundwater.

Regulations governing recording inventories and registering reusable products: Any enterprise using reusable ash must seasonally submit details of their use of the ash to the local environmental protection bureau. These details must include sources of the ash, volumes used, results of sample testing, uses of the ash, and certification verifying the treatment of any excess ash and refuse. Enterprises must also keep all related documents for at least three years in case they need to be reviewed. In addition, before a batch of Category 2 or 3 products can be reused it must be registered online.

Statistic data showed a total reuse of 2.15 million tonnes of bottom ash from 2003 to 2009, and a bottom residue reuse rate of 80% in 2009. As for reuse categories, 29% of the total volume produced was used as coarse aggregate base, 5% was used as foundation and road fill, 28% was used to make Controlled Low Strength Material (CLSM), 27% was used as aggregate for non-reinforced concrete, 1% as asphalt concrete aggregate, 2% as brick aggregate, and 8% as coarse aggregate for filling pipeline trenches.

Other nations' experiences in recycling ash that Taiwan has referred to include the following:

The Netherlands: Nearly all industrial waste is reused, including building materials, mixed asphalt, bottom ash from refuse incinerators, and blast furnace slag. Bottom ash is readily accepted as a building material by the construction industry in the Netherlands and the nation has the highest rate of bottom ash reuse in the world. The Building Materials Decree (BMD) includes building materials that come into contact with water (rainwater, groundwater, etc). One of the underlying concepts of the BMD is that of critical load, which states that unpolluted soil should remain unpolluted, and soil that is already polluted should not be made worse. Soil pollutant control regulations in the Netherlands are also somewhat different from in Taiwan and other nations in that they are based on standards of "environmental uptake values" and "composition values" rather than "leaching values."

France: The French government encourages private-sector enterprises to reuse bottom ash from certified incinerators according to specific standards. In 1994, the French government promulgated regulations governing the use of bottom ash in road construction projects. The regulations stipulate the degree of stability that bottom ash must have achieved before it can be considered to be a low-polluting material. This is determined by comparing leachate density of the ash to French national leaching value testing standards. The bottom ash is divided into three categories for reuse and the reuse rate is around 50%. The most common use of bottom ash is road and embankment fill.

Germany: In Germany, Z0-Z4 judgment criteria are used to formulate regulations that cover the disposal and reuse of bottom ash and fly ash. The criteria are referred to when measures are adopted to ensure that the quality of bottom ash is Z2 or above. After bottom ash and fly ash has been produced it must be stored for at least three months to reduce water content and to allow it to mature. Residual iron must also be sieved out before it can be used, and overall composition must accord to regulations. Bottom ash can only be reused in materials situated at least one meter above groundwater. The current reuse rate of bottom ash in Germany is 69%. It is mostly used in civil engineering projects as substitute aggregate or processed building material.

Denmark: Bottom ash and fly ash from incinerators that meets regulatory requirements can be reused as road fill, aggregate, and earth fill. Substandard ash is disposed of by burying it in coastal areas or by other methods of the bottom ash, 10% by weight consists of recoverable metals and other natural resources; another 10% is deemed unfit for reuse and buried. This leaves 80% that is reused as fill for car parks, roads, and civil engineering projects. The current reuse rate for bottom ash in Denmark is 90%.

2. Reuse of Fly Ash

Currently, the Mucha Incinerator in Taipei City is the only incineration plant in Taiwan where fly ash is recycled by rinsing it with water. This process involves rinsing 1 part fly ash with 5 parts of water and 4.5% of stabilizing agent to remove residual chloride. The plant currently rinses 500~1,000 kg of fly ash per hour. The rinsed ash can then be added to the raw materials used for

making cement at a proportion of 0.2~0.3%.

In terms of accepted international practice, since fly ash contains a high percentage of harmful substances many nations designate it as being harmful or requiring special management. This means that priority is given to rendering it harmless or ensuring isolated disposal rather than reuse. There are, however, a few nations that are attempting to reuse fly ash; in the Netherlands it is used as an additive for concrete asphalt and in France it is first melted before reuse.

Drawing upon Europe's Experience to Create a Comprehensive Mechanism for Managing Reusable Materials

Taiwan intends to adopt the following measures to make the reuse of bottom ash and fly ash from incinerators more feasible and in line with international trends:

1. Continue referring to renewable materials management practices of developed nations

Developed nations, such as the Netherlands and others in the EU, base their management of bottom ash reuse on environmental critical load standards in conjunction with the concept of environmental uptake. Different testing methods that simulate on-site conditions are used according to the form of the reusable product (eg., moulded or unmoulded). Such methods include column or tank leaching tests. The European system is clearly more thorough and careful than that currently used in Taiwan and can also be applied to all reusable refuse, not only the reuse of bottom ash. This makes it a suitable model for Taiwan to learn from. However, wholesale adoption of the European system would require wide-ranging revisions of the relevant regulations, testing methods and control standards, which means that positive results would unlikely to be forthcoming in the short term. Apart from continuing to observe developments in developed nations, Taiwan will also continue to adopt European recycling standards for each category of waste. Work will also continue on gathering baseline data to facilitate the suitable use of renewable materials as a step toward establishing a comprehensive management system for reusable materials.

2. Actively promote the establishment of an interdepartmental mechanism for bottom ash reuse

The successful promotion of bottom ash reuse requires a high degree of interdepartmental cooperation. Departments involved include the EPA, the Ministry of Economic Affair's Industrial Development Bureau, the Public Construction Commission and the Ministry of the Interior's Construction and Planning Agency. These last two agencies are at the helm of promoting bottom ash reuse as they oversee civil works projects and the use of building materials. By thoroughly estimating what is required at every stage and working together to establish a comprehensive waste reuse management system, the existing recycling channels should become more diversified and efficient.

3. Encourage local governments to engage the power of public support in promoting the reuse of fly ash

Fly ash is tricky to deal with due to its high content of heavy metals and dioxins. At present, fly ash is buried permanently in landfills after being stabilized. However, Taiwan is a densely-populated nation, and finding suitable sites for landfills has proven difficult. Many existing landfills also only have a very limited number of years of practical use remaining. These adverse conditions point to the necessity of reusing fly ash. The EPA is currently actively encouraging local governments to carry out fly ash reuse pilot plans at incinerator plants and to merge their own creative ideas with private-sector strengths to come up with new ways to treat and reuse fly ash.

Feature Article

Suao-Hualien Route Improvement Plan EIA Approved

On 9 November 2010, the EPA convened the 200th meeting of the Environmental Impact Assessment Committee to assess the environmental impact of the improvement plan for the mountain section of the Suao-Hualien Route (Suao-Dongao, Nanao-Heping, Hechung-Dachingshui). The environmental impact assessment (EIA) was passed after over six hours of discussion.

There has been a certain amount of public concern regarding the comprehensiveness of the geological data compiled as a part of the improvement plan. In response to these concerns, the developer pointed out during the meeting that thorough geological surveys had been conducted, 27 boreholes had been drilled, and geophysical testing had been conducted to a depth of 1,715 meters. Relevant documents, research, and data from 838 boreholes in the Suao-Hualien corridor had also been collated. The committee also evaluated geological data gathered during the excavation of tunnels when the nearby North-Link Line and New North-Link Line railways were laid, which it considered to be far more comprehensive than the latest borehole data and enough to convince them to pass the assessment.

As for other issues, such as flooding in tunnels and ecological impact, the committee also requested in their summary of the assessment that, "Regulations should be formulated to cover work stoppage and resumption in the case of continuous water seepage in excess of 2,100 liters per minute for over 24 hours. Taking into account the topography, geology, and surrounding environment of the site, back-up plans should be drawn up for shoring up the rupture in the water vein and reusing the dispersed water or directing it to join an existing groundwater source. Methods adopted must be included in the final draft and implemented as described." The summary also stated that, "Regulations should also be formulated to cover work stoppage and resumption in the case of threat to environmental impact indicator species. The selection of suitable indicator species should include terrestrial, freshwater (based on rivers' high flow periods) and marine species."

Another of the committee's requests was that, "The developer should set up a supervisory committee for the period of the work to monitor safety, ruptures in water veins, air and water pollution, and the preservation of ecological and cultural assets. The committee should be made up of representatives from citizen groups and experts in the field. In the interests of open disclosure of information, the inspection and monitoring data gathered should be published on relevant Web sites."

The developer has been evaluating possible options for the route as part of a full-spectrum improvement plan. To this end, seven opinion leader consultation sessions and two in-depth discussions with experts and academics have been held so far in order to formulate a plan that will be acceptable to all parties. Before the environmental assessment was submitted, the EPA also assisted in the holding of two consultations and one pre-evaluation meeting. During these meetings all attendees were in full agreement about the pressing need for the improvement plan. There has also been continuous communication with local residents, opinion leaders and citizen groups during the planning of the path for the mountain section of the Suao-Hualien route and the input from all parties has been very useful in reinforcing environmental assessment data and environmental impact reduction policy research.

Climate Change

Taiwan Participates in Montreal Protocol MOP-22

The 22nd Meeting of Parties (MOP-22) to the Montreal Protocol on Ozone Depleting Substances (ODS) ended in Bangkok, Thailand on 12 November 2010. A Taiwan NGO team attended MOP-22 and were able to observe and participate in new ODS control developments in the protocol.

Although Taiwan is not a signatory to the Montreal Protocol, it has from the beginning voluntarily followed the ODS control regulations for developed nations signatory to the Protocol. Since 1990, Taiwan has actively participated in every Montreal Protocol MOP and related working group meetings. Taiwan has also been developing an action plan to respond to international trends in ODS control. The government releases up-to-date information to local enterprises on what is happening internationally in areas such as future reduction trends and developments in substitute techniques. These regular reminders help local enterprises prepare and respond in time to new developments.

The work of protecting the ozone layer as envisaged by the Montreal Protocol reached an important milestone in 2010 with the complete phasing-out of the use of chlorofluorocarbons (CFCs) by signatory nations. CFCs have a high Global Warming Potential (GWP), and controlling this particular category of ODS will go a long way toward slowing down climate change. According to a research report from the Technology and Economic Assessment Panel (TEAP) appropriate treatment of all CFC-producing products worldwide would be equivalent to stopping the release of over 400 million tonnes of CO_2e into the atmosphere annually.

The main issues discussed at MOP-22 were:

(1) Promotion of safe management of ODS banks, and the sharing of experience on destruction techniques during final disposal.

(2) Information from each nation regarding quarantine and pre-shipment (QPS) uses of methyl bromide.

(3) Whether or not the use of hydrofluorocarbons (HFCs) should be restricted under the Montreal Protocol, and the promotion of low-GWP substitute products.

Discussion of these issues precluded negotiations on follow-up plans for controlling ODS.

After five days of intensive negotiations it was decided that the current timetable each party is abiding by for eliminating ODS would remain unchanged. Participants agreed that a request should be sent to the TEAP to strengthen gathering of data on the development and transfer of ODS final disposal technology. All signatory nations were requested to implement monitoring procedures to gather available data about the uses of methyl bromide for quarantine and pre-shipment (QPS) purposes. It was also decided to request that TEAP assist the Multilateral Fund for the Implementation of the Montreal Protocol in the evaluation of regulations concerning Article 5 countries, to include low-GWP alternatives as part of applications for alternative technology plans. The main focus of follow-up work to the Montreal Protocol will be in the areas of managing ODS recycling and destruction, and reinforcing controls on methyl bromide and promoting the use of low-GWP alternatives.

Air Quality

Revised Emission Standards Encourage Earlier Production of Compliant Vehicles

In its continuing effort to improve air quality, and after referring to E.U. and U.S regulatory standards, the EPA announced the details of Fifth Phase Emission Standards and related regulations for gasoline powered vehicles. The new regulations will take effect on 1 October 2012, to encourage vehicle manufacturers to move ahead of schedule their production and marketing of vehicles that comply with the new standards.

According to the Air Pollution Control Act (空氣污染防制法), car manufacturers and importers are required to obtain exhaust inspection certificates for all car models. Inspection certificates are required for license plate applications. Hence the EPA incorporated the previously announced Fifth Phase Emission Standards for gasoline-fuelled cars into the revision of the Gasoline and Alternative Clean Fuel Engine Automobile Model Exhaust Examination Qualification Certification Issuing, Revoking and Annulling Regulations (汽油及替代清潔燃料引擎汽車車型排氣審驗合格證明核發撤銷及廢止辦法). Announcement of the revision will incentivize manufacturers to act earlier to have each vehicle model undergo inspections and obtain certificates of conformity to exhaust regulations. Thus they will be able to start selling new cars compliant with Fifth Phase Emission Standards, taking reduction of air pollution one step further.

The EPA stated the main objective of this amendment is to codify the implementation of Fifth Phase Emission Standards, including details on inspection methods and procedures, threshold values for diagnosing vehicle systems, and other coefficients. Other objectives are to build a

comprehensive management system for vehicle inspection and certification, as well as to simplify related forms to encourage manufacturers to apply for car model exhaust inspection certificates electronically, thereby reducing the use of paper.

The EPA also indicated that the draft revision of the Gasoline and Alternative Clean Fuel Engine Automobile Model Exhaust Examination Qualification Certification Issuing, Revoking and Annulling Regulations can now be viewed at the EPA Web site, http://w3.epa.gov.tw/epalaw, on the Web page for pre-announcements of draft regulations (法規命令草案預告區), and suggestions or comments related to the draft amendment can be made during the pre-announcement period. It is hoped that everyone can contribute toward ameliorating air pollution and furthering sustainable development in Taiwan.

Air Quality

LPG Subsidy to Be Extended Two More Years

In order to proactively advance the "Gasoline-Liquefied Petroleum Gas (LPG) Dual Fuel Vehicle Promotion Plan," the EPA drafted an amendment to the Vehicular LPG Subsidy Regulations (降低車用液化石油氣售價補助辦法) which would extend implementation of the subsidy to 31 December 2012.

The "Gasoline-LPG Dual Fuel Vehicle Promotion Plan," launched by the Executive Yuan on 21 January 2008, allocated responsibility for administering the NT$2 per liter LPG subsidy to the EPA until 31 December 2010, at which time a decision would be made, based on oil and gas prices, whether to continue with the subsidy.

After assessing and comparing policies to support stable oil and gas prices, the EPA drafted a revision to extend the LPG subsidy to 31 December 2012. Considering that after the new emission standards take effect on 1 October 2012, pollution reduction in new cars retrofitted to use LPG will be relatively less effective, thus subsidies will not apply for retrofitted cars. Instead, subsidies will be applied only to gas prices for legal LPG vehicles coming out of the factory before 30 September 2012.

The subsidy will be adjusted according to oil and gas price fluctuations, in order to keep the difference between oil and gas retail prices stable. The price difference between unleaded gasoline 95 and the EPA-subsidized retail price for automotive LPG on 31 December 2010 will serve as the baseline for determining the LPG subsidy level, up to a maximum of NT$2 per liter.

The EPA indicated the draft revisions to the Vehicular LPG Subsidy Regulations can now be viewed by the public on the EPA Web site at: http://ivy5.epa.gov.tw/epalaw, on the Web page for pre-announcements of draft regulations.

Eco-labeling

Dual-Track System Speeds up Applications for Green Mark IT Products

The application process for Green Mark labeling of IT products has recently been sped up and simplified. The EPA is now awarding Green Mark certification to IT products that have obtained US Electronic Products Environmental Assessment Tool (EPEAT) Gold Standard certification, and meet regulatory standards for materials quality and additives.

Since IT products generally have a relatively short life cycle, and in order to encourage more manufacturers to apply for Green Mark certification, the time needed to evaluate applications has been shortened. Since March of 2010, a dual-track system has been adopted. Applications can either be submitted and evaluated using existing regulations, or certification can be awarded as a result of the product already having received EPEAT accreditation. The dual-track system is fully in keeping with international practice. It also simplifies the task of evaluating Green Mark applications for the EPA and means less work preparing documents for manufacturers, resulting in quicker processing of submitted applications.

In order to gain Green Mark certification, products that have already achieved EPEAT Gold Standard certification must also meet a number of selected criteria including:

- Must not intentionally contain cadmium, mercury, lead, or hexavalent chromium.
- Any large plastic components must not contain PVC or certain flame retardants.
- Must bear detailed indication of the materials the plastic components are made from.

EPEAT is the first set of voluntary environmental standards for IT products that the US has drawn up. The three standards are gold, silver, and bronze. To be awarded Gold Standard a product must meet 23 compulsory criteria and attain a score of over 75% from the selective criteria for products of its category. The US government also requires that at least 95% of IT products purchased by government agencies must be EPEAT certified. As of October 2010, 399 Taiwan products have gained EPEAT accreditation.

Water Quality

President Ma Praises Purification of Tamshui River

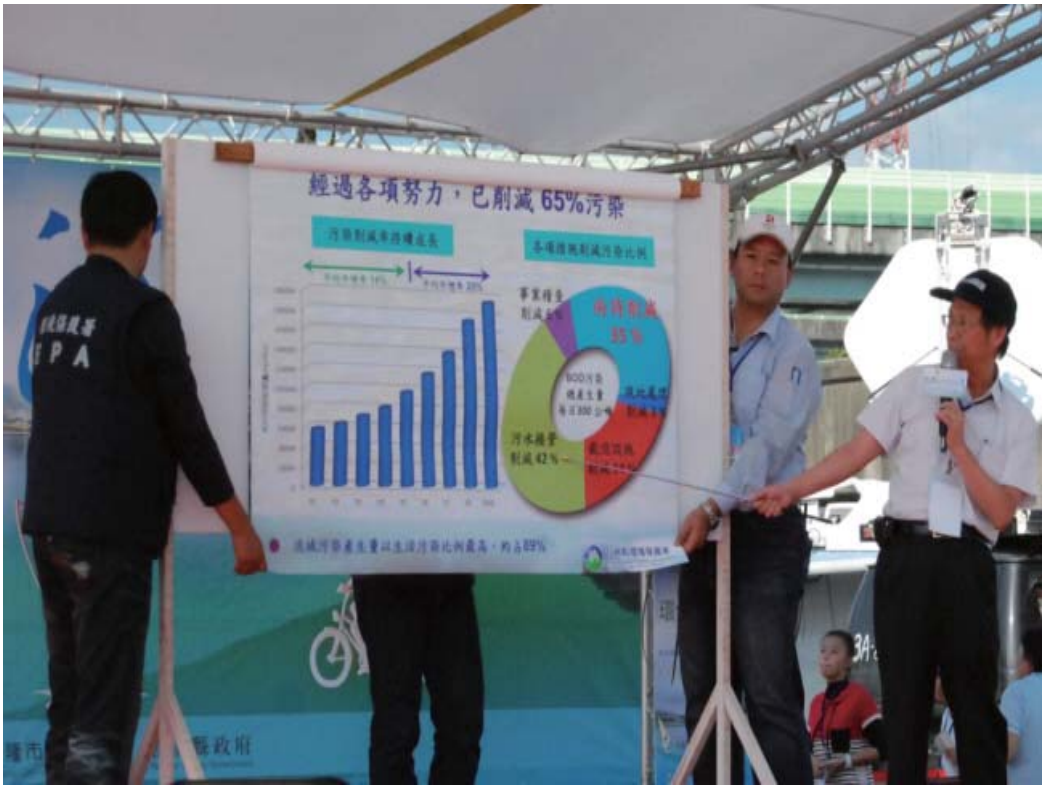
On 11 November 2010 the EPA held an environmental event regarding rivers on the Dunhuang Wharf in Taipei City. The event was designed to draw attention to the results of the Tamshui River Purification project and educate the public about the importance of "water conservation and pollution reduction; energy conservation and carbon reduction; cleaning up Taiwan; and protecting the land." President Ma Ying-jeou spoke at the event, and Taipei Mayor Hau Long-bin, Taipei County Magistrate Chou Hsi-wei and Taoyuan County Magistrate Wu Chih-yang were also in attendance to laud the success of the project. The best proof however that the purification project has been a success was the attendance by river patrol teams from the four municipalities through which the Tamshui River flows: Taipei City; Taipei County; Keelung City; and Taoyuan County.

As President Ma pointed out in his speech, protecting rivers is an integral part of urban development and the purification of the Tamshui River has been particularly difficult. It has taken a combined and sustained effort from the four local governments to achieve the improvements that are now clearly evident, and the achievements deserve to be recognized by the nation's residents. In addition to praising the hard work of the personnel involved in the purification project, the president also urged everyone to continue working for a cleaner and more attractive river.

The purification of the Tamshui River drainage area began in 1988 and average water quality has been improved to the level of light pollution, which is the best the water has been for 30 years. Sections of clean river water are becoming longer and polluted sections shorter. Biodiversity is also better than it has been for many years.

Twenty-three water purification facilities, together capable of treating household effluent from 250,000 persons daily have also been built in the drainage area. Forty riverside parks and wetlands have also been laid out, covering a total of 1,300 hectares, the equivalent of 50 Daan Forest Parks or 4 New York Central Parks. The constructed wetlands connect together to form an 18 km biodiversity corridor. The 380 km of cycle paths and river boat routes that now exist are also popular destinations for weekend

leisure activities. Thirty-nine river patrols composed of over 1,000 volunteers have been formed to patrol the drainage area, report illegal behavior, and help in the task of cleaning up the river and its banks.



EPA Minister Stephen Shu-hung Shen reports the purification results and visions of Tamshui River (right)

Recycling

International Conference on Resource Recycling Well Attended

The EPA convened the Fourth International Conference on Resource Recycling on 16-17 November 2010. Over 300 people from industry, government and academia attended the event and had a chance to share ideas at exhibit booths set up during the event.

EPA Minister Stephen Shu-hung Shen remarked during the opening speech that in order to lay down the foundation for Cradle to Cradle Design, and explore ways to create a Blue Economy with limited available resources, the conference theme, "Green Thinking to Create New Value," was adopted to introduce recycled product concepts and the scope and current status of recycling management and management technology. Also discussed was the development of reuse technology for waste resources from the perspective of the trend toward making products with renewable materials. Participants from Taiwan and all over the world shared experiences in managing the certification and marketing of renewable materials. It was hoped that the conference could provide an information and experience sharing platform for experts, scholars and business people in related fields, as well as stimulate the development of domestic research and innovation in environmental technology. It is also anticipated that events such as this can attract and cultivate more talented people in the area of green industry, helping to make strides toward a sustainable resource cycling society.

Conference organizers invited Dr. Mario Tobias, Member of the Executive Board Technologies & Services, BITKOM in Germany, Mr. Danilo Bonato, General Manager of Consorzio ReMedia in Italy, Mr. Hideki Miyakawa, Environmental Consulting Division Manager of Recycle One Inc. in Japan, and Ms. Pamela Brody-Heine, EPEAT Consultant in the U.S., to discuss views and share experiences with other domestic and foreign experts and scholars on how each country is implementing waste resource recycling and reuse. Organizations involved in recycling management technology, environmental products and services, and resource recycling, were invited to set up display booths at the conference. The event focused on sharing information and exchange of ideas in hopes of making innovative recycling concepts and methods more widespread.

Climate Change

EPA Uses Green IT to Save Energy at Integrated Data Center

By extending the use of cloud computing the EPA was recently able to complete the second stage of its Integrated Data Center project. The original 104 mainframe computers have been merged into 18 units, which has freed up 82% of available space and resulted in a monthly saving of 12,000 kWh of electricity, or the equivalent of 7.5 tonnes of CO_2e per month.

The use of virtualized mainframes has already become a common way for data centers to save energy and reduce carbon emissions. In order to make further energy savings, the EPA has also adopted cloud computing technology to situate its mainframes in the Government Service Network's Integrated Data Center. Sharing the same data center and the same data center management system with other government agencies allows for significant reductions in manpower and basic operating costs – air conditioning, fire prevention, backup power supplies, etc.– to be made across government departments.

The EPA's Integrated Data Center will eventually become the "personal cloud" of the future Ministry of Environment and Natural Resources and its subsidiary agencies. Taking advantage of the special features of cloud computing will permit the future Ministry of Environment and Natural Resources to continue to offer a full range of information services during the administration's reorganization that is planned to be finished by 2012.

The task of merging facilities will continue during the coming year. In accordance with the principle of zero-based thinking, repeat functions in the applied information systems will be eliminated and redundant Web sites will be taken offline. More eco-friendly computer hardware will also be employed, in keeping with the national "Energy Saving and Carbon Reduction" campaign. Environmental information services will also be updated by adding social networking capabilities in keeping with the spirit of Web 2.0. A more dynamic information platform will be of great assistance in promoting environmental protection.

The EPA adopted cloud computing technology on completing the second stage of its Integrated Data Center project

News Briefs

Two-Year Subsidy Extension for Electric Bikes Considered

On 15 November 2010 the EPA pre-announced amendments to extend subsidies for purchases of new electric and electric-assist bicycles until 30 November 2012. The EPA noted that in recent years regard for energy saving and carbon reduction issues has gradually grown, with remarkable increases in purchases of lower polluting vehicles such as electric and electric-assist bicycles. To encourage greater use of such low pollution transportation, the subsidies for new purchases by the public of electric and electric-assist bicycles will remain in effect for another two years, until 30 November 2012. A subsidy of NT$3000 is available per person to purchase one unit.

Fee Reduction of NT$1100 for Green Mark Cars from January 2011

To encourage greener production, on 1 January 2011 the EPA will implement a recycling fee reduction of NT$1,100 per vehicle for small cars that have qualified for the Green Mark eco-label, rewarding them with a differential fee rate. On 27 September 2010, the EPA issued the first Green Mark certification to small cars. The Taiwan Honda sedan "Fit," and passenger-cargo models CR-V 2.0 and CR-V 2.4, were certified on 15 October 2010. The specifications for the small car Green Mark include a total weight not exceeding 3,500 kg, and engine size not exceeding 3600 cc, applicable for vehicles that utilize traditional fuel, gas-electric hybrids or gasoline-LPG dual-fuel.

Nine Counties/Cities Achieve Excellence in Green Procurement in 2009

In 2009, thirteen government agencies achieved excellence in terms of high percentages of green procurement and related promotion activities. This included four central government agencies, namely, the Coast Guard Administration, Ministry of National Defense, Ministry of Transportation and Communications, and National Youth Commission; and nine county or city level governments, namely, Taipei City, Kaohsiung City, Taichung City, Chiayi City, Tainan City, Taipei County, Kaohsiung County, Yilan County and Taitung County. The Taipei City, Hsinchu County and Chiayi City governments have attained the distinction of reaching a green procurement rate of 90% or more in three consecutive years.

In 2009, green procurement by government agencies reached a total of NT$7.15 billion, an increase of NT$418 million over 2008. At agencies and local bureaus under the Executive Yuan, a total value of NT$6.14 billion in green items were purchased. The green procurement rate of 90.4% not only exceeded the year's target of 88%, it was an increase of 14% over 2008.

The Green Procurement Promotion Result can be found on Greenliving Informatiion Platform (http://greenliving.epa.gov.tw/GreenLife/eng/E-The_Green_Procurement_Promotion_Result.aspx)

Activities

Taiwan and US Hold Workshop on Monitoring Atmospheric Mercury

To strengthen Taiwan's atmospheric monitoring and obtain advanced technology, the EPA invited four atmospheric mercury monitoring specialists from the USEPA to participate in the "Symposium

Monitoring." Convened at the EPA on 11-12 November 2010, the symposium focused on progress results and technology exchange for monitoring long-range transport of atmospheric mercury, and to push Taiwan's atmosphere monitoring capacity towards a world-class level. The EPA said that due to industrial development in Asia, mercury pollutants from human activity have continued to increase and be transported long distances by air currents, influencing global air quality and causing countries to place greater emphasis on mercury monitoring. Canada and the US have already set up atmospheric mercury monitoring stations on the eastern rim of the Pacific Ocean to better understand the impacts of mercury pollutant transport on the global environment. In the Tatachia area near Jade Mountain, Taiwan has also established a world class background air quality monitoring station, 2,862 meters above sea level on Lulin Mountain, to monitor the influence of atmospheric mercury on Taiwan.

Green Hotels Adopt "Green Coin" Donation System

To encourage green behavior of hotel guests in Taiwan, the EPA referred to the Green Coin plan promoted in hotels in Japan. Currently there are 37 hotels and guesthouses in Taiwan participating in this "plan to spread green actions." During the period 1 January 2011 to 31 December 2011, customers of the total 45 participating businesses will be rewarded Green Coins when they choose not to use disposable toiletries or have their towels, sheets and other goods changed during longer stays. The Green Coins can then be donated via collection boxes to support environmental protection efforts of NGOs. Local environmental protection bureaus (EPBs) will then count the green coins received from businesses during this period, convert the amounts into total donations, and publicize the related information on the EPA Green Life Web site. The EPA and EPBs will hold a ceremony to issue donations. More information is viewable at http://greenliving.epa.gov.tw/GreenLife/WalkSing/MotelInfo.aspx.

Eight Fast Food Outlets Awarded in Recycling Assessment

The EPA implemented the Fast Food Outlet Recycling Assessment and Guidance Plan for the first time in 2010. Two outlets were found to be outstanding recyclers, and jointly took first place in the "Excellent" category: McDonalds' Kuangfu outlet and KFC's Shihlin outlet, both in Taipei. Six other fast food outlets that also won "Excellent" awards were: McDonalds' Hsintaiwu, Hsichi and Hsinsheng, Taipei outlets; Mos Burger's Kanghua, Taipei outlet; KFC's Neihu and Chungshan outlets in Taipei; and Burger King's Shihda, Taipei outlet. All of the outlets won the awards on the basis of their in-store facilities and educational material designed to encourage their customers to recycle waste according to type, and their own thoroughness in separating recyclable waste according to type.

Taiwan and US participants of the "Symposium on Atmospheric Mercury Monitoring"

Environmental Policy Monthly
R.O.C. (Taiwan)

Publisher
Stephen Shu-hung Shen, Minister

Editor-in-Chief
Tsung Yung Liu

Executive Editors
Y. F. Liang; Yu-ling Yang; Li-kuo Hsiao; Shao-wen Chang

Translator
Peter Morehead

Editorial and translation support provided by:
Hui-kuo Consulting, Ltd.,
The EPM is available on the EPA Web site at http://english.epa.gov.tw/en/File-DownloadPage_EN.aspx?path=420

For inquiries or subscriptions to the printed version, please contact:
Environmental Policy Monthly

Environmental Protection Administration
Office of Sustainable Development
83, Sec. 1, Jhonghua Rd.,
Taipei 100, R.O.C. (Taiwan)
tel: 886-2-2311-7722, ext. 2211
fax: 886-2-2311-5486
e-mail: umail@epa.gov.tw

ISSN: 1811-4008
GPN: 2008600068

行政院新聞局出版登記證局版北市誌字第1611號
中華郵政北台字第6128號執照登記為雜誌交寄