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Feature Article

Taiwan Environmental Milestones Documentary Released

As a part of the ongoing series of events and activities that are surrounding the centennial celebrations of the founding of the Republic of China (ROC), on 20 October 2011 the EPA invited former EPA ministers and deputy ministers to Taipei for the announcement ceremony for the documentary film "Important Environmental Events in ROC History." The painstakingly-filmed documentary is a detailed account of the work of environmental protection and the major environmental events that have occurred in Taiwan in recent years.

As Minister Stephen Shu-hung Shen pointed out, the 45-minute documentary is filmed in the form of an oral history based on interviews with people who were directly involved in each event and on facts gathered about various environmental events. Three major events are depicted: the refuse crisis, the Amorgos oil spill, and the Typhoon Morakot disaster.

The section titled "The War on Refuse" harks back to the days when the odorous smell of garbage was commonplace in Taiwan. The documentary relates how rapid economic growth, technological advances, and the continuing urbanization of the population led to unremitting increases in the volumes of garbage being produced. The old refuse treatment plants were unable to adequately treat the volumes of refuse given to them, and sanitation standards were

sadly lacking. Large loads of stinking refuse were routinely dumped in the mountains, in rivers, and along the coast, creating serious pollution problems and providing ideal breeding grounds for flies and mosquitoes. The situation deteriorated such that refuse was even piling up in the streets, a nightmarish scene that most elder residents of Taiwan find hard to forget. The documentary details the background to the problem, the construction of new landfills and incinerators, the promotion of the first recycling schemes, the enforcement of refuse separation, and how Taiwan has developed resource recycling to the point that the nation's record of refuse reduction is the best in the world.

"The Amorgos Oil Spill – a 100-Day Catastrophe for the Kenting Coast" is related by people who were directly involved in the event. This part of the

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documentary starts by pointing out that the Marine Pollution Control Act had just been passed into law, and goes on to describe how a large volume of oil was spilled off the coast of Kenting in an area with a large population of corals. It then details the arduous clean-up operation and the successful establishment of marine pollution crisis management and response mechanisms. The final section of the film – "The 8/8 Typhoon Morakot Disaster - Adaptation in the Face of Extreme Weather Natural Disasters" – is a reflection on how the most extreme weather occurrence of the last few years caused a compound disaster that resulted in more casualties than any other typhoons. Morakot Disaster shows the need for disaster prevention and suitable adaptation measures, and the documentary emphasizes the link between the impact of climate change and how we can mitigate its impact by saving energy and reducing carbon emissions through implementing new green policies and developing green energy industries. The latest governmental ideas on low-carbon communities and a low-carbon economy are also mentioned.

The purpose behind the making of the documentary was to use the context of disasters and clean-up operations to show how Taiwan's environmental protection policy and regulations have successfully evolved to bring about significant and noticeable improvements in the local environment. It is hoped that the documentary will spread awareness of how resources and manpower from both public and private organizations are deployed in fighting pollution and improving the environment and how people participating in the work of environmental protection are truly helping to create a cleaner and safer living environment for us all. Looking back at Taiwan's recent history gives us a clearer view of the future and it is hoped that the government, private-sector groups, and the general public will continue to work shoulder-to-shoulder, while not forgetting past mistakes, to raise environmental quality in Taiwan as high as possible and create a living environment based on sustainable development.

Those wishing to watch the documentary can find it in the multimedia section (多媒體影音) of the EPA's Web site: http://media.epa.gov.tw/mm_ch/index.aspx

Feature Article

International Green Living Expo Held to Promote Green Business Opportunities

The EPA recently held the 2011 Green Living Expo to encourage people to take practical steps toward greener lifestyles in six main themes: food, clothing, accommodation, transport, education, and entertainment. In order to help Taiwan's manufacturers of green products expand overseas, the EPA also held a green products exhibition and a smart green cities exhibition at the same time, significantly expanding the scale of this year's expo. The expo facilitated direct and extensive exchange between local and international bodies on environmental protection issues.

In order to create local and international business opportunities and gain greater international recognition for Taiwan's achievements in promoting green living, green cities, and the manufacturing of green products, the EPA joined forces with the Ministry of Economic Affairs (MOEA) and the Taiwan External Trade Development Council (TAITRA) to hold three exhibitions: the 2011 Green Living Expo, the 2011 Taiwan International Green Industry Show, and the 2011 Taiwan Smart Green City Expo. The 2011 Green Living Expo, held from October 26–29, was judged to be the best to date in terms of connecting with the way local people live their lives, and its success was evidenced by the long lines of students and citizens at the expo's gates.

At a press conference on October 17, EPA Minister Stephen Shu-hung Shen cordially invited all Taiwan residents to come and get a taste of green living. Eco-friendly options for food, clothing, accommodation, transport, education, and entertainment were on display at the expo. Also available was information concerning green living in general, reducing greenhouse gas emissions, green consumerism and the Green Mark, and resource recycling and reuse. The expo was part of the government's campaign to get people to adopt simple low-carbon alternatives and strive together to create a genuinely low-carbon green economy.

As Minister Shen pointed out, green lifestyles mean that individuals and communities endeavor to abide by the Laws of Nature when consuming finite resources. This entails minimizing pollution and damage to both our own bodies and the fragile ecosystems on our planet, in order to achieve a certain level of sustainability in the ways we lead our lives.

There are many ways in which we can do this, such as:

- Carrying reusable cups and chopsticks for dining out
- Buying eco-friendly clothing
- Using public transport whenever possible
- Choosing outdoor recreation over indoor entertainment activities

- Choosing green hotels when traveling or when on vacation
- Using water-saving and energy-saving appliances at home
- Maximizing air circulation and insulation to reduce the need for air-conditioning

During the four days of the 2011 Green Living Expo, the expo hall was divided into the Green Living Area, the EPA Theme Building, and the Stage Activities Area. The large Green Living Area accommodated stalls belonging to 5 central government agencies, 20 county and municipal environmental protection bureaus, 7 environmental protection groups, and 80 private-sector manufacturers. Stalls displayed information and products related to green food, clothing, accommodation, transport, education, and entertainment. Such products included fibers made from recycled PET bottles, flooring made from recycled plastics, energy-saving hybrid vehicles, water fountains, LED lights and optical coating lights, solar water heaters, recycled paper, and biodegradable polylactic acid (PLA) plastic containers.

The EPA Theme Building displays focused on carbon emissions based upon the differing lifestyles of single adults, couples, and single-child families. For example, the CO₂ equivalents for everyday activities such as turning on an air-conditioner for an hour, eating a beef burger, or riding a motorcycle for one kilometer were all given. After ensuring that people had grasped the concept of carbon emissions, EPA personnel were on hand to give guidance in ways of reducing emissions and developing greener lifestyles. In addition, displays about some of the major environmental campaigns that the EPA has been promoting in recent years – for example, concerning low-carbon foods and beverages, resource recycling, electric vehicles, green packaging, refuse reduction, the Green Store plan – were also located in the EPA Theme Building. The main activity held in the Stage Activities Area was a label recognition quiz designed to educate the public. The Taiwan Forestry Research Institute also had a DIY activity called Creative Uses of Forest Resources, and the Triple-E Institute put on a Used Computer DIY Assembly activity. Perhaps the most unusual thing about this year's expo was that the EPA invited all of Taiwan's municipal leaders to perform for the Green Living in Taiwan display. The heads of Hsinchu City,

Taoyuan County, and Taichung City duly obliged and showed off the unique features of their own localities. Another big draw was the 3D animated movie vehicle provided by the National Taiwan Science Education Center, which showed 3D movies. The full agenda of meaningful activities over the four days kept public interest high.

Another special feature of the eco-friendly expo was the absence of paper, as all of the information regarding the content of the displays – including short documentaries or posters - was in digital form that could be downloaded to cellphones or iPads using a Quick Response (QR) code. The expo was also designed to promote the Green Hotel Action Plan: A stall was set up with funding kindly provided by DuPont Taiwan and called We "Like" Ecotourism Green Coins to educate the public about green hotels. Members of the public who visited the stall and used their cellphones to photograph a Green Coin QR code and upload it to their own Facebook page were given

a Green Coin that they could donate at the expo to one of the three national environmental protection plans being supported by the Green Hotel Action Plan.

The EPA has recently been promoting the Sustainable Environment Golden Decade policy. The most important parts of this policy are reducing carbon emissions and introducing alternative energy sources. Experience has shown that the degree to which energy can be saved and emissions reduced is directly related to the degree of public participation in the campaign.

The EPA thus hopes to continue working with the public in creating low-carbon, energy efficient lifestyles and households and promoting green consumption for the benefit of public health and to achieve the ultimate goal of truly sustainable local and global environments.



▶ Members of the public on the first day of the expo

Air Quality

Indoor Air Quality Management Act Draft Passed at First Reading

On 24 October 2011, the Legislative Yuan's Social Welfare, Health and Environment Committee passed a draft of the Indoor Air Quality Management Act (室內空氣品質管理法草案) at the first reading. The act defines "indoors" and "indoor air pollutants," and sets criteria for issuing penalties. Enforcement of the act will help safeguard public health.

The draft was put forward by the Executive Yuan and defines "indoors" as any enclosed or semi-enclosed public space, including public transport. The controlled substances include carbon dioxide, carbon monoxide, formaldehyde, total volatile organic compounds, bacteria, fungi, suspended particles with a diameter under 10 micrometers, suspended particles with a diameter under 2.5 micrometers, ozone, and any other substances indicated in announcements by the central competent authorities.

The indoor public spaces that fall under the regulatory scope of the act are schools, colleges, and cram schools; hospitals and clinics; government offices; trains and railway stations; civilian airplanes and airports; mass transit facilities; buses and bus stations; financial services buildings; post offices; theaters; and hotels/motels. The above facilities were chosen after an overall consideration of seating (standing) capacities, volumes of people entering and leaving the facilities, and levels of indoor air pollutants determined by the relevant central competent authorities.

The draft also states that standards for indoor air quality will be decided by the central competent authorities on the basis of the announced category of the indoor space and any special features regarding its use after consulting the relevant central

industry competent authorities. The draft does not cover occurrences of sub-standard air quality due to events that are not the responsibility of owners, managers, or users of the announced premises, such as brief, accidental discharges of toxic gases in high concentrations that pose a danger to human health.

The draft also states that owners, managers, or users of announced premises should assign specialists to take responsibility for maintaining good air quality within the premises and should also hire an air quality testing agency to conduct periodic tests. The results of such tests should be regularly announced and kept on record. Owners, managers, or users of announced premises who are found to have falsified such records are liable to be fined NT\$100,000 to NT\$500,000.

If the air quality of an indoor area does not attain minimum standards the competent authority will issue an order for improvements to be made before a given deadline. Owners, managers, or users of the premises who do not make the necessary improvements in time will be fined NT\$50,000 to NT\$250,000. Continued neglect to meet the required standards will result in accumulated fines, and serious offenders could have access to the premises curtailed or blocked completely. They could even be forced to close down their business.

Air Quality

Stationary Sources Air Pollution Control Fee Rates Adjusted

On 17 October 2011, the EPA announced revisions to the Stationary Sources Air Pollution Control Fee Collection Rates, featuring adjusted rates that will affect 19 industries, including those engaged in power generation, petrochemical industries' public infrastructure, and refuse incineration. The most affected company will be the Taichung Power Plant, which according to 2010 report data is estimated to face a 105% fee rate hike as its air pollution control fee increases from NT\$117.9 million to NT\$124.1 million. The least affected company will be Toufen Plant of China Petrochemical Development Corporation (CPDC), which will only have to add about NT\$40,000 or 0.75% to its original fee of NT\$5.3 million.

In order to get industries to actively invest in amelioration of emissions, the EPA has just revised special rate coefficients for sulfur oxides (SO_x), nitrous oxides (NO_x) and volatile organic compounds (VOCs). A 20%~60% fee rate reduction will be given

to companies that have installed control equipment or have retrofitted equipment to effectively reduce air pollutant emission concentrations of stationary sources. Special fee rates will also be given to companies that voluntarily invest in improvements

that exceed, to a specified minimum degree, their legal obligations concerning emission restrictions. These may include enforced emission standards, tighter local standards for counties or municipalities, environmental impact assessment commitment restrictions and best available control technology (BACT) emission restrictions. This measure was developed in the interest of setting fair rates across the board and will take effect on 1 January 2012.

The EPA stated that before revising the special rate coefficients, about 264 companies were eligible for reduced air pollution fees. Yet 19 of these companies were assessed to determine if their air pollutant emission concentrations were lower than legally required since they had improved operations according to environmental impact assessment commitment restrictions, BACT emission restrictions or stricter local emissions standards. Applying the special rate on this basis alone would not be fair,

however these companies were also found to be voluntarily adopting effective control methods such that pollutant concentrations have been improved beyond the emission restrictions with which they were originally required to comply. The EPA will apply the special rate in consideration of this additional effort. Conditions for applying the special rates have been duly revised in order to encourage industries to actively invest in improvements, adopt cleaner production and combustion practices, as well as upgrade the efficiency of air pollution control equipment.

Detailed information on fee rate adjustments is posted on the EPA Web site (<http://ivy5.epa.gov.tw/epalaw/index.aspx>) in the section on the latest environmental regulations (最新環保法規). More information and details on this preannouncement are posted on the EPA Web site (<http://ivy5.epa.gov.tw/epalaw/index.aspx>) under the Web page titled 「法規命令草案預告區」.

Soil and Groundwater

Soil, Sediment and Groundwater Pollutant Analysis Standards Take Effect

The EPA has drafted the Soil, Sediment, and Groundwater Pollutant Analysis Quality Control Standards (土壤底泥及地下水污染物檢驗測定品質管制準則) to provide a set of guidelines for controlling the analysis of testing for pollutants in soil, sediment, and groundwater. The standards took effect on 15 November 2011.

The 3 February 2010 revision of Article 10, Paragraph 3 of the Soil and Groundwater Pollution Remediation Act (土壤及地下水污染整治法) regarding the Paragraph 1 stipulation on conducting soil, sediment, and groundwater pollutant analysis requires that analysis methods and quality control standards shall be set by the central government competent authority. The EPA has thus drafted the Soil, Sediment, and Groundwater Analysis Testing Quality Control Standards in order to ensure a set of guidelines for controlling the quality of analysis for pollutants in soil, sediment, and groundwater. The Standards contain eight articles, the content of which are outlined as follows:

Article 3: Quality control shall be in place to monitor the analysis process. Quality control for soil, sediment and groundwater analysis, shall be conducted according to analysis methods decreed by the EPA.

Article 4: When conducting soil, sediment, and groundwater samples, appropriate quality control samples must be collected according to relevant sampling methods announced by the EPA. Sampling procedures must include appropriate sampling monitoring procedures and should be recorded to facilitate follow-up sampling tracking and management.

Article 5: In order to maintain quality analytical data for inorganic samples of soil, sediment and groundwater, a series of quality controls and control procedures should be conducted including preparation of calibration curve, calibration check, blank sample analysis, duplicate sample analysis, check sample analysis, and additive sample analysis.

Article 6: In order to maintain quality analytical data for organic samples of soil, sediment and groundwater,

a series of quality controls and control procedures should be conducted including blank sample analysis, check sample analysis, additive sample analysis and duplicate sample analysis. When analyzing samples for volatile organic compounds, relevant analysis methods announced by the central government

competent authority should be followed, including stipulations on delivering blank samples and in-situ blank sample analysis. Dioxin testing quality control should also follow analysis methods announced by the EPA.

Soil and Groundwater

Soil Pollution Assessment, Survey and Testing Management Regulations Announced

The EPA has drafted the Soil Pollution Assessment, Survey and Testing Procedure Management Regulations (土壤污染評估調查及檢測作業管理辦法) as authorized under Article 9, Paragraph 2 of the Soil and Groundwater Pollution Remediation Act (SGPRA, 土壤及地下水污染整治法) to ensure the sound implementation of reporting references and reviews as stipulated in Article 8, Paragraph 1 and Article 9, Paragraph 1 of the SGPRA. The new regulations will ensure grantors, businesses, assessors and testing organizations have a protocol for affairs concerning land and soil pollution.

The EPA stated that the Soil Pollution Assessment, Survey and Testing Procedure Management Regulations were formulated mainly to provide details concerning the various work procedures, data processing, and verification methods involved in implementing soil pollution assessments, surveys and tests. For example, soil pollution assessments, surveys and tests on land designated for industrial use should be conducted by an investigator, who is required to follow specified methods—either the site environmental assessment method or the grid method. This regulation also sets rules for determining minimum sampling numbers, conditions exempt from testing and a list of pollutants that should be tested for.

In addition, regulations have been made regarding the scheduling of reports. The grantors or businesses should complete procedures for applying for reference material and reviews with the local environmental protection bureau within six months of soil sampling. The latest format for soil pollution assessment, survey and testing data can be downloaded from the EPA Web site at <http://sgw.epa.gov.tw/public/index.asp>.

The EPA pointed out that whether the situation is: 1) a grantor handing over land reporting references in accordance with Article 8 of the SGPRA, or 2) a regulated company filing for a review according

to Article 9 of the SGPRA. In either case one may conduct a land transfer or establish, alter or terminate business only after obtaining a letter of acceptance from the environmental protection bureau. If the grantor handing over land or a regulated company completes land transfer or procedures for establishing a factory, making alterations or terminating business before obtaining a notice of reference or review approval from the environmental protection bureau, they will be penalized according to Article 40, Paragraph 1 of the SGPRA and fined from NT\$150,000 to NT\$750,000. Such cases will also be notified of a deadline to make corrections.

Failure to meet the deadline will result in further penalties. The EPA reiterates that after businesses obtain a notice of approval of review of their soil pollution assessment survey and test data, they must complete registration of any changes or termination of business operations within six months.

Failure to meet this six-month deadline will require resubmission of new soil pollution assessment survey and test data. This regulation will take effect on 1 January 2012. All are reminded to respond early and to follow the regulations to protect their own rights and interests and avoid penalization.

Soil and Groundwater

Contaminated Soil or Groundwater Detected at 28% of Highway Gas Stations

There are 14 service areas along Taiwan's national highways that house a total of 29 gas stations. Since 2002 the EPA has conducted tests of soil and groundwater at 27 of these stations. Tests for the remaining two – at Nantou and Gukeng – were not completed until 2011, and the EPA expects to conduct inspections on them next year. Of the 27 premises already inspected, pollution was detected at 7 stations, or roughly 28% of the total. Soil pollution failed control standards at five of these stations, and both soil and groundwater pollution failed control standards at the other two stations.

Five of the seven polluted gas stations had diesel pollution and two had both gasoline and diesel pollution. The main polluted areas were around the gas pumps, with some smaller amounts of pollution also being discovered around fuel storage tanks. The main soil pollutant that was found to exist in quantities above the control standards was total petroleum hydrocarbons (TPH); the main groundwater pollutants were total petroleum hydrocarbons as diesel (TPHd) and naphthalene. These seven gas stations will be required to submit and implement pollution improvement or remediation plans. The EPA will also invite academics and experts to join an inspection team to supervise the operators' clean-up operations and evaluate the final results to ensure the pollution does not affect public health.

The EPA decided to conduct a study of the patterns of gasoline dispensation at the highway service areas. The average monthly volume of gasoline dispensed was found to be 203.9 kiloliters, a figure much higher than the monthly average of just 43.6 kiloliters for

ordinary gas stations. Some of the highway gas stations have also been operating for over 30 years, and it was discovered that these stations, and the ones with the highest dispensation volumes of fuel, were more likely to have soil and groundwater pollution problems. To prevent further contamination of soil and groundwater, the EPA is calling upon gas station operators to conduct more frequent inspections of areas, such as around gas pump stands, where pollution is more likely to occur. Leakage testing of gas pump hoses and testing of pipe and hose seals should also be carried out regularly.

There are currently over 2,700 gas stations in operation in Taiwan. The EPA began its gas station soil and groundwater inspections in 2002, adopting a staggered approach over a number of years. Inspections have been completed on over 2,200 stations, and it is estimated that by the end of 2012 pollution inspections of the remainder will be completed.

Ecolabeling

International Conference Held on Marketing of Ecolabel Products

In order to promote the use of Green Mark products and also to further international exchanges, on 25 October 2011 the EPA held the International Ecolabeling Conference - Marketing and Opportunities for Green Products. A total of 43 foreign experts and scholars from 24 nations, including representatives from the Global Ecolabeling Network (GEN), joined 10 local experts to discuss a variety of topics ranging from ecolabeling systems around the world, green procurement by Asian governments, green procurement by international corporations, and the marketing of green products. The analyses offered by the experts were insightful and concise, and the delegates engaged in fruitful exchanges of opinions and experiences with each other.

The 10 local and 43 foreign experts (including GEN delegates from 24 nations) discussed ecolabeling systems around the world, green procurement by Asian governments and multinational corporations, and the marketing of green products. The brief analyses offered by the experts were insightful and concise. As EPA Minister Stephen Shu-hung Shen pointed out in his remarks at the conference, Taiwan's Green Mark system already includes specification standards for 113 categories of products. To date, 6,742 products with an output value of US\$2.5 billion have been awarded Green Mark certification. Ecolabeling mutual recognition agreements have also been signed with ten other nations. These achievements clearly show that Taiwan has had laudable success in promoting ecolabeling.

One of the keynote speakers at the conference was Prof. Ryoichi Yamamoto, chairman of the International Green Purchasing Network (IGPN), who gave a speech entitled "Current Developments in Green Products and Ecolabeling." Ten other speeches were given on specialized topics such as how to recognize

excellence in environmental declarations and claims, the Asian experience in setting up governmental green procurement systems, and trends and opportunities worldwide for green products.

The conference marked a rare opportunity for Taiwan to host such a distinguished international gathering on green consumption. The EPA and the Environment and Development Foundation worked hard to convince GEN that their 2011 Annual General Meeting be held in Taiwan in conjunction with the International Ecolabeling Conference, that was held as part of the series of events surrounding the nation's centennial. The joint conference gave a greater number of delegates even more opportunities to discuss the promotion and marketing of green products and services. This marked the fourth time since 2002 that Taiwan has held a major international symposium on the topics of ecolabeling and green consumerism. More information on the 2011 International Ecolabeling Conference can be found on the Web site, <http://www.iec2011.com.tw/index.html>.

Noise Control

Motorbike Noise Random Testing Management Regulations to be Revised

The EPA is drafting revisions to certain articles of the Motorbike Noise Random Testing Management Regulations (機車噪音抽驗檢驗處理辦法) to make certification more convenient by combining motor vehicle exhaust and noise tests into a single form of certification. The revisions will raise the efficiency and convenience of the current certification procedures.

The draft revises the definitions of some terms in Article 2, such as "motor vehicle," "engine type," "vehicle type," and "motor vehicles in use overseas." The amendment, which will allow for combined exhaust emission and noise inspection certification, and for applications for vehicles of the same engine type to be processed together, is expected to enable issuance of joint certificates for vehicles that comply with both exhaust and noise tests.

A new addition is an extension of the vehicle types that only have to submit a noise test report if they are assessed to have the potential to cause noise pollution. The formats of supplementary documents that have to accompany applications have also

been simplified, as have the principles by which representative vehicles can be selected. The guiding principle behind the revisions has been to streamline management procedures in order to simplify administration and make life easier for citizens.

Also in the revision is a new requirement that brings the regulations into line with amendments to Article 24 of the Ministry of Foreign Affairs Statute for Document Authentication by Embassies & Missions Abroad and the Notary Law. All non-English foreign documents that accompany applications must be translated into Chinese with the translations notarized by either the relevant overseas mission or a certified public notary in Taiwan.

Oil Spill Emergency Response Mechanism Facilitates Clean Up of Grounded Jui Hsing Tanker Near Keelung

Accelerated efforts to address an oil spill from the tanker Jui Hsing off the shore of Keelung allowed clean-up operations to be completed on 6 October 2011. Dawulun Beach has been restored to its original pristine beauty. In the early hours of 3 October 2011, the Jui Hsing, a Panama-registered gravel ship, ran aground off the coast near Keelung and broke into three sections. The ship was carrying 81 tonnes of diesel, 218 tonnes of fuel oil, and 13.5 tonnes of lubricant, a total of 312.5 tonnes. The spill eventually affected marine territory from Wanli fishing port to the Waimushan Trail.

At ten minutes past midnight on October 3, the Coast Guard Administration (CGA) received the first report about the accident and by 00:45 had dispatched personnel to the scene to aid in the rescue effort. At 01:31 the CGA informed the EPA that there were clear signs of oil spillage. EPA emergency response personnel, along with personnel from the environmental protection bureaus of New Taipei City and Keelung City immediately traveled to the scene of the spill and set up a Level 2 Emergency Response Center in the Wanli Township Office in accordance with the guidelines laid out in the Executive Yuan's Major Marine Oil Spill Emergency Response Plan.

On the same morning at 07:00 EPA Minister Stephen Shu-hung Shen and CGA Minister Wang Ginn-wang held the first emergency response meeting at the Wanli center. The ministers personally took charge of the emergency response to the marine oil spill, deciding priorities and delegating responsibilities. The response effort was jointly handled by personnel from 23 agencies, including the EPA, CGA, Ministry of Transportation and Communications (MOTC), Ministry of Defense, Ministry of Economic Affairs, Council of Agriculture Fishery Administration, New Taipei City Government, Keelung City Government, Hsieh-Ho Oil Power Station, Wanli Township Office, Kuosheng Nuclear Power Plant, and the shipping company.

The emergency response team first collected together all the equipment brought by each agency and then prepared lifejackets, oil sorbent, oil absorbers, oil booms, oil skimmers, and oil storage tanks for deployment. The next stage of the operation involved deploying oil booms in the harbor mouths of the fishing ports of Wanli, Dawulun, and Waimushan to prevent the oil from reaching the inner harbors. The highest concentration of oil was found on

Dawulun beach, where oil sorbent was used to soak up the oil. Major facilities such as the Chinshan and Kuosheng nuclear power plants also took preventative measures.

In order to gain a better understanding of the situation at sea, the EPA deployed an oil pollution monitoring vehicle that uses radar to map out distribution patterns of oil slicks. Simulations of possible oil slick expansion patterns based on prevalent ocean currents, wind directions, and other data were also taken into account by the emergency response units. The EPA also requested that the ship owner submit an oil pollution clean-up plan and a ship cargo removal plan in accordance with Article 32, Paragraph 1 of the Marine Pollution Control Act (海洋污染防治法).

From October 5, the ship owner took over the clean up of the polluted Dawulun harbor and Dawulun beach, which lies to the south of the fishing port. The ship owner also strove to clean oil and wreckage from the coral reefs along the coast, and removed 172 tonnes of oil and refuse. The owner also hired a maritime company to send a team of divers down to inspect the damage to the oil tanks of the sunken Jui Hsing and to seal off ventilation shafts to prevent any residual oil from leaking into the sea. By October 12, the task of siphoning residual oil from tanks in the broken hull had been completed, with a total of 15 tonnes of oily water being removed.

The clean-up operation has been completed around the polluted tire bumpers installed along piers in the Dawulun fishing harbor in Keelung City, Dawulun Beach and the coral reefs where the oil tanker ran aground. The affected area from Wanli fishing port to the site of the accident in New Taipei City was also confirmed completely free of oil pollution. The MOTC is responsible for the follow-up work of removing the

tanker, and before it is removed the ship owner is responsible for preparing oil booms and sorbents and for awaiting orders to take precautions against further oil spillage. Claimants for damage compensation will be able to seek redress from those responsible for

the oil spill and all of the agencies involved have been asked to prepare damage assessments that will be kept for use as evidence in compensation settlements for cleanup or damages at a later date.

Environmental Monitoring

Taiwan and US Establish Regional Environmental Data Sharing and Technology Exchange Platform

From 27~28 October 2011, the EPA held the 2011 Regional Environmental Data Working Conference, which marked the establishment of the first environmental data and technology exchange platform for the Asia-Pacific region. The conference was jointly hosted by EPA Minister Stephen Shu-hung Shen and Malcolm D. Jackson, the US EPA's Assistant Administrator for the Office of Environmental Information and Chief Information Officer. Senior environmental protection department officials representing the governments of Indonesia, the Philippines, and Thailand were also in attendance at the conference. The delegates held fruitful discussions on regional cooperation and the future development of environmental data collecting technology.

Holding the conference was part of the agenda that Minister Shen discussed with the head of the US EPA, Administrator Lisa Jackson, during a Taiwan EPA delegation's visit to the US in August. This marks the first occasion that environmental data has been the primary subject of a cooperative project. The conference was also highly remarkable in terms of bilateral cooperation and regional development.

The EPA pointed out that the collection, management, and integrated analysis of environmental data is fundamental to the work of environmental protection. Taiwan has been very successful using collected environmental data to aid environmental protection for many years. The US EPA expressed its hope at the conference that Taiwan's development experience, combined with the Taiwan-US cooperative plan model, can be employed to stimulate deeper regional cooperation in the Asia-Pacific region and the formation of more regional environmental

partnerships, which would be further aided by shared environmental data for the formulation and implementation of environmental protection policies across the region. The Taiwan EPA stressed that once the new Ministry of Environment and Natural Resources is established, the scope of the collection, integration, and application of environmental data will be even broader, making the importance of international cooperation on data technology and experience sharing even more apparent. Also invited to the conference were personnel from the Taiwan Forest Research Institute and the Endemic Species Research Institute, who reported on the ongoing research into the development of ecological and biodiversity data systems. These two research institutes will be incorporated into the new Ministry of Environment and Natural Resources, and are expected to bring new vitality for future applications of environmental data.

News Briefs

Taiwan-US Cooperation Extends to Green Energy Technology Partnership

On 25 October 2011, the EPA held the 2011 Taiwan-US Clean Energy Source Forum in conjunction with the American Institute in Taiwan (AIT) and the Taipei

American Chamber of Commerce. The purpose of the forum was to expand Taiwan-US cooperation in the field of environmental protection and to promote the development of clean energy sources, a vital component of greenhouse gas reduction mechanisms. The forum was also an

opportunity to promote green businesses and green energy applications.

The forum was held in three sessions. The main themes for each session were energy efficiency and green architecture, energy supply, and electricity supply strategies. Government officials and industry experts from both nations were invited to discuss ways to promote public and private sector partnerships and stimulate technological innovation with the ultimate goal of reducing carbon footprints and emissions. The most feasible way to reach this goal is to restructure manufacturing industries and develop low-carbon energy resources, while simultaneously employing more renewable energy facilities in order to gradually reduce reliance on fossil fuels and nuclear energy. Governments must also put in place suitable market mechanisms and the necessary regulatory framework to promote energy saving, emissions reduction, and green lifestyles. The AIT invited representatives from US government departments and industries to explain how clean energy initiatives and strategies are being implemented at both national and local levels in the US. The Taiwan EPA invited government officials with relevant expertise, green energy industry representatives and a number of other local experts and scholars to attend.

Pacific Ocean Greenhouse Gas Monitoring Opens New Opportunities for Cooperation

The EPA drew together the many years of hard earned results from the industrial, government and academic sectors to promote international cooperation in environmental protection, holding the 4th International Symposium on Asia-Pacific Greenhouse Gas Monitoring on 31 October 2011, at the Taiwan Central University Atmospheric Remote Sensing Center. Symposium attendees included conveners of global greenhouse gas monitoring plans and other experts from the EU, Germany and France, as well as domestic scholars and experts from related fields. Participants exchanged experience regarding international developments in greenhouse gas monitoring technology, the status of cooperative initiatives, and monitoring results. There was also an opportunity for extensive exchange of views regarding plans for China Airlines to participate in the

EU's "Integration of routine Aircraft measurements into a Global Observing System" (IAGOS) plan in 2012. This initiative involves the participation of global passenger aircraft in research plans to monitor atmospheric pollutants and greenhouse gases.

EPA Welcomes Local Solutions to LED Light Pollution Complaints

Since 2005, the Taipei City Department of Environmental Protection has dealt with 53 different complaints regarding light pollution, including 22 concerning store signs (display screens and "light box" store signs), 16 concerning direct lamp light (from spotlights, billboard illumination, and street lights), 7 concerning neon advertisements, 5 concerning light reflected from illuminated exterior walls, and 3 concerning indoor photography or indoor strobe lights. Eighty-five percent of the complaints were about store signs, lamp lighting, and neon lights. Fewer complaints have been received in non-metropolitan municipalities, but those that have been received mainly concern the dangers to drivers caused by having their vision impeded by bright LED store signs at roadsides. The EPA convened a meeting with local governments and the Ministry of Interior's Construction and Planning Agency to discuss the drafting of light pollution prevention regulations that government agencies can refer to when dealing with complaints from drivers about having their vision dangerously impeded by excessively bright LED light from advertising signs, electronic scrolling tickers, neon lights, and electronic billboards. It was suggested during the meeting that the Construction and Planning Agency consider adding an amendment to the Store Sign and Standing Advertising Management Regulations to regulate the use of advertising illumination. It was also suggested that local governments assess the possibility of adding regulations to local municipal bylaws to restrict the use of flashing advertising signs and to add two new categories – method of illumination and types of lighting – that have to be stated on applications for permission to erect outdoor illuminated advertising. The legality and control of newly-constructed composite blinking icon advertising, or previously installed standing shop signs or advertising signs that have had blinking icons added to them, also came under discussion.

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