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Feature Article

Reducing Ozone-depleting Substances: Strategies and Results

In response to ozone depletion, Taiwan voluntarily abides by the same Montreal Protocol restrictions as required for developed nations despite the fact that Taiwan is not a party to the Protocol. Taiwan has been actively participating in international organizations and the Meetings of the Parties to the Montreal Protocol to stay abreast of the latest trends in the control of ozone-depleting substances (ODS) and to demonstrate its commitment to international environmental conventions.

Taiwan Regulations Related to Ozone-depleting Substances

On 19 June 2002, the EPA amended Article 30 of the *Air Pollution Control Act* (空氣污染防制法) to state that the central competent authority may: prohibit or restrict the substances listed in international treaties as causing air pollution; and prohibit or restrict the manufacture, import, export, sale, and use of products that are made of or filled with such substances. The central competent

authority was also authorized to formulate all related management regulations. The EPA has thus been referring to the Montreal Protocol on Substances that Deplete the Ozone Layer, and regularly updating and announcing the scope of Taiwan's regulatory control over listed substances.

Taiwan is currently following the *Air Pollution Control Act*, last amended on 30 May 2006, and is controlling the use of ozone-depleting substances through the *Regulations Governing Chemical Substances*

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Controlled by the Montreal Protocol (蒙特婁議定書列管化學物質管理辦法) announced on 4 May 2007, the Hydrochlorofluorocarbon Consumption Management Regulations (氟氯烴消費量管理辦法) amended and announced on 5 August 2009, and the Methylbromide Management Regulations (溴化甲烷管理辦法) announced on 21 May 2003.

Taiwan's ODS Reduction Strategies

In terms of concrete actions, after the Montreal Protocol took effect in 1989, the Ministry of Economic Affairs (MOEA) immediately established its Montreal Protocol Task Force for integration of relevant information and response planning. In 1991, the EPA asked the Ministry of Foreign Affairs (MOFA) and the MOEA to jointly establish the EPA Montreal Protocol Task Force to integrate ozone layer protection work.

Considering the state of the ozone layer is closely connected with the greenhouse effect, the name of the task force has been changed several times and its responsibilities expanded to cover both protecting the ozone layer and mitigating climate change. Since 2008 the Climate Change and Energy Conservation, Carbon Reduction Task Force – under the National Council for Sustainable Development – has been

working directly on responses to the United Nations Framework Convention on Climate Change (UNFCCC) and the Montreal Protocol. The task force has been convened by the EPA to integrate related work and coordinate relevant ministries.

Although Taiwan is unable to be a signatory nation to the Montreal Protocol, it will continue to abide by the Protocol's stipulations and work with developed nations to phase out the production and consumption of ozone-depleting substances. Some of the measures in which the EPA has been actively involved as a primary coordinator include:

- 1) International participation
- 2) ODS elimination planning
- 3) Information dissemination
- 4) Formulating related legislation
- 5) Providing incentives for ODS elimination
- 6) Technological assistance
- 7) Deterring illegal trade of ODS products

Ozone Layer Protection In Taiwan

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Taiwan, Republic of China, has been following the same rule as Non-Article 5 countries of the Montreal Protocol for protecting the ozone layer and has made a lot of achievements, despite Taiwan's non-member status. As to the domestic actions, the government has implemented several effective laws and regulations, enforced strict customs control and promoted public awareness. Moreover, Taiwan also actively participates in international activities including the Montreal Protocol meetings, reporting annually on ODS consumption to the Secretariat and so on. Currently CFC and HCFC are no longer in production in Taiwan. The import of CFC is only permitted for medical and laboratory uses as exemption. Importing HCFC requires a permit and is on allocation basis. Methyl bromide is only used for QPS since 1999, and it has been replaced gradually by heat treatment.

- > UVI Forecast
- > Newsletter
- > Taiwan EPA
- > UNEP Ozone

Whats Hot

- [Brochure update - Ozone Layer Protection: What Taiwan Has Been Doing](#) new
- [2014 Statistics for Methyl Bromide in QPS Applications in Taiwan](#)
- [Taiwan EPA Finalizes Annual Quota Allocations of HCFCs for 2015](#)
- [The Taiwan EPA Held Training on Tackling ODS Smuggling in 2015](#)

- The Taiwan EPA provides updated ozone layer protection information and lists its achievements in ODS reduction on the webpage "Ozone Layer Protection in Taiwan" (http://www.saveoursky.org.tw/ozone_en/).

ODS Elimination Planning

Taiwan has been following the Montreal Protocol to control the substances listed in Annexes A, B, C, and E of the Protocol. As early as 1993, a list of controlled substances was announced as part of the MOEA Industrial Development Bureau's *Working Guidelines for Chemicals Controlled under the Montreal Protocol* (管制蒙特婁議定書列管化學品作業要點).

More substances have been added to the Industrial Development Bureau's list in accordance with the decisions of the Montreal Protocol. The list now comprises nine major categories. Category details, controlled substance names, chemical formulas and their ozone depletion potential (ODP) values can be found on the list.

The Montreal Protocol outlines different control measures for each group of chemicals based on production and consumption considerations:

Baseline level – Calculated production or consumption level of a controlled substance for a designated year

Freeze control period – Timetable according to which production or consumption level should not exceed the baseline level

Percentage reduction – Timetable for percentage reductions from production or consumption baseline levels

Exemption conditions – Conditions for which a given chemical can be exempted from production or consumption controls

Taiwan's overall phase out agenda has been formulated according to Montreal Protocol stipulations for developed (Non-Article 5) nations and the factors mentioned above. Relevant reduction measures and targets are also based on the same criteria.

ODS Elimination Achievements

Of all the substances controlled by the Montreal Protocol, Taiwan now only produces hydrochlorofluorocarbons (HCFCs), which are listed in Group I of the Montreal Protocol's Annex C. The timetable for freezing production of substances in this

category became effective in 2004, and since then Taiwan has been controlling HCFC production levels in line with the Protocol requirements. Furthermore, the only company producing HCFCs in Taiwan, Formosa Plastics (台灣塑膠股份有限公司), stopped producing HCFC-141b and HCFC-142b in 2004, and further stopped producing HCFC-22 in June 2005. Taiwan has not produced any HCFCs or any other ODS since 2006.

With the persistent efforts of government and industry, Taiwan's consumption of ozone-depleting substances also meets the requirements of the Montreal Protocol. In fact, some years prior to 1996, Taiwan's consumption level of many of the controlled substances had met compliance with the Montreal Protocol's stipulations.

Taiwan's 2014 ODS Consumption

In 2014, Taiwan's total consumption of HCFCs was 158.483 ODP tonnes, which is below a level that satisfies the Montreal Protocol requirement to reduce the consumption to 25% of the baseline level, or 159.539 ODP tonnes for Taiwan. The following is a brief breakdown of Taiwan's ODS consumption statistics for 2014:

- ODS production – Since 2006 Taiwan has not produced HCFCs or any other ODS
- ODS imports – In 2014 Taiwan only imported HCFCs and methylbromide. The imported HCFCs included: 2,788.58 tonnes of HCFC-22 (153.372 ODP tonnes); 2 tonnes of HCFC-142b (0.13 ODP tonnes); 253 tonnes of HCFC-123 (5.06 ODP tonnes); 1 tonne of HCFC-124 (0.022 ODP tonnes); and 15.764 tonnes of HCFC-225 (0.394 ODP tonnes). In 2014, 31.573 tonnes of methylbromide was also imported, mainly for quarantine and pre-shipment (QPS) purposes.
- ODS export – In 2014, Taiwan only exported 9 tonnes of HCFC-22 (0.495 ODP tonnes).

Paying Close Attention to International ODS Control Trends

In addition to rigorously eliminating ODS, Taiwan is also paying close attention to trends related to the Montreal Protocol. The two major conferences that the Taiwan government sends delegations to

every year are the Meeting of the Parties to the Montreal Protocol, and the Meeting of the Open-ended Working Group of the Parties to the Montreal Protocol. Since 1990, the competent authority has been inviting representatives from relevant ministries and industries to participate in these conferences so as to facilitate a better understanding of ODS related issues and trends. Taiwan has also been hosting a few large-scale international symposiums to bring together domestic and foreign government experts, industry representatives, and academia. Issues such as international control trends, national response

strategies, and the development of alternative products and technologies are all discussed. Joining international organizations is another important way of helping to protect the Earth's ozone layer. Since 1995 Taiwan's Industrial Technology Research Institute (財團法人工業技術研究院) has joined the International Cooperative for Environmental Leadership as well as the Alliance for Responsible Atmospheric Policy in order to work with the international community to protect the Earth's environment and ozone layer.

Climate change

World-renowned Climate Scientist Praises Taiwan's Carbon Reduction Achievements

Climate scientist Professor Hans Joachim Schellnhuber – an advisor to German Chancellor Angela Merkel, and a member of the Earth League composed of leading scientists and economists – was recently invited by the EPA to a conference held in Taiwan. In his presentation he called on the people of the world to look squarely at the inevitable disasters that climate change will bring.

During the “Climate Change, Globalization vs. Localization” international press conference on 18 September 2015, Professor Schellnhuber stated that Taiwan's voluntary formulation and passing into law of the *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法) was highly laudable. He also referred to some of the latest research conducted by US National Oceanic and Atmospheric Administration (NOAA), and raised the following seven personal viewpoints:

Greenhouse gases will lead to higher sea levels and the spread of tropical diseases.

- The ± 2 °C limit that is being widely discussed is the absolute upper limit that Earth can bear and ± 1.5 °C is the safer range we need to aim for.
- Climate change policy-making involves ethics and generational justice.
- Taiwan's vigorous emissions reduction efforts should help in pushing China to join the emissions reduction agenda.

- Raising energy efficiency will be a major factor for Taiwan to reach its emission reduction targets.
- If current climate change trends continue, mean temperatures will increase by 8°C by 2300 and the world will no longer be fit for human habitation.
- Professor Schellnhuber will personally declare his support in the international arena for Taiwan's progress in emission reduction.

EPA Minister Kuo-Yen Wei (魏國彥) pointed out that Taiwan passed the *Greenhouse Gas Reduction and Management Act* on 1 July 2015 to serve as the legal basis for relevant measures. The Act lays out Taiwan's emission targets until 2050, and empowers the government to apply legally binding reduction strategies and economic instruments to be implemented by relevant ministries. Taiwan, along with other nations worldwide, also closely follows developments in climate treaty negotiations. In response to the Lima Call for Climate Change Action that calls on each nation to shoulder its emission-reduction responsibilities, on 17 September 2015 Premier Chi-Kuo Mao (毛治國) announced Taiwan's

intended nationally determined contributions (INDCs) to the world. It is hoped that this low-carbon roadmap will help to establish a win-win-win situation for the environment, economy and national security.

Professor Schellnhuber also outlined four other approaches that Taiwan can adopt to achieve its carbon reduction targets:

- The large-scale rolling out of electric scooters to replace conventional gasoline motorcycles

- The development of off-shore wind power
- Replacing concrete with wood as a construction material
- Influencing supply and demand from the consumption end



▶ Minister Kuo-Yen Wei (far right) and Professor Hans Joachim Schellnhuber (second from right) at the press conference

Climate Change

Draft Greenhouse Gas Offset Management Regulations Preannounced

The *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法) was promulgated on 1 July 2015. In accordance with Article 22 of the Act, and after referring to the *Greenhouse Gas Offset Early Action Program Promotion Principles* (溫室氣體先期暨抵換專案推動原則) as well as previous program review experiences, the EPA has formulated a draft of the *Regulations Regarding Greenhouse Gas Offset Program Management* (溫室氣體抵換專案管理辦法). These regulations are aimed to aid in the task of promoting voluntary emission reductions before the next stage of cap-and-trade emission control rolls out.

To encourage and provide incentives to Taiwan's industrial enterprises to take early actions on greenhouse gas reduction, the EPA promulgated the *Greenhouse Gas Offset Early Action Program Promotion Principles* before the enforcement of the *Greenhouse Gas Reduction and Management Act*. After the Act was passed into law the EPA drew up a draft of the *Regulations Regarding Greenhouse Gas Offset Program Management* in accordance with the stipulations and principles for an offset early action program laid out in the Act. The credits for the voluntary reductions will be recognized according to these regulations.

The draft of the regulations has 22 articles and 7 annexes. The main points are as follows:

1. Legal basis and definition of terms
2. Offset program application procedures and follow-up audits
3. Registration and application criteria, documents required, and review standards
4. Documents required and review standards for reduction methodology approval
5. Offset program and reduction methodology review procedures, as well as reduction credit calculation and approval procedures
6. Purposes of use for approved reduction credits
7. Information that must accompany applications for greenhouse gas reduction credit accounts
8. Regulations governing early action programs, offset programs and reduction methodologies approved before the implementation of these Regulations
9. Code format for reduction credits
10. Emission intensities for power generation, iron and steel industry, semiconductor manufacturing, thin film transistor liquid crystal display manufacturing, and cement industry

Climate Change

Private Sector Opinions Gathered to Formulate Greenhouse Gas Reduction and Management Act Bylaws

The *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法) was promulgated on 1 July 2015, and the EPA is keen to promote the understanding of the framework of the Act and ensure that the current emissions reduction scheme will be phased out smoothly. To this end, on 25 September 2015 the EPA held a forum to which experts from central and local governments, industry, certification and testing agencies, and citizen organizations were invited. The discussions allowed the EPA to hear a wide range of opinions, and much progress was made in formulating bylaws for the Act.

The EPA states that the Forum for the *Greenhouse Gas Reduction and Management Act* was held to gather public opinions on the five subsidiary regulations that had already been preannounced. These are the:

- *Greenhouse Gas Management Fund Revenues and Expenditures, Safekeeping, and Utilization Regulations* (溫室氣體管理基金收支保管及運用辦法)
- *Regulations Covering Incentives for General Waste Landfills to Lower Greenhouse Gas Emissions* (一般廢棄物掩埋場降低溫室氣體排放獎勵辦法)
- *Greenhouse Gas Auditing and Inventory Management Regulations* (溫室氣體排放量盤查登錄管理辦法), including the *First Batch of Emission Sources Requiring Greenhouse Gas Auditing and Inventories* (第一批應盤查登錄溫室氣體排放量之排放源)
- *Greenhouse Gas Auditing and Inspection Certification and Testing Agencies Management Regulations* (溫室氣體認證機構及查驗機構管理辦法)

• *Regulations Governing Greenhouse Gas Offset Program Management* (溫室氣體抵換專案管理辦法)

Of the above, only the *Greenhouse Gas Management Fund Revenues and Expenditures, Safekeeping, and Utilization Regulations* are completely new. The other four regulations had been rolled out under the *Air Pollution Control Act* (空氣污染防治法) .

The drafts of the regulations were discussed fervently with in-depth view exchanges between stakeholders. The EPA will be holding a series of meetings around Taiwan at which the delegates' opinions will be

subjected to further examination and analysis. The EPA will also be compiling comments collected during the preannouncement period so that the above regulations can be rolled out smoothly and establish a new climate change legal infrastructure.

Details of the drafts are published in the *Greenhouse Gas Reduction and Management Act* section of the EPA webpage <http://www.epa.gov.tw/mp.asp?mp=ghgact> and in the Preannounced Draft Regulations section on the EPA website <http://ivy5.epa.gov.tw/epalaw/index.aspx>.

Water

Draft Amendments to Water Pollution Control Act Enforcement Rules Preannounced

Due to the amendments to the *Water Pollution Control Act* (水污染防治法) announced on 4 February 2015 and the collection of water pollution control fees beginning in October 2015, the EPA has preannounced corresponding amendments to the *Water Pollution Control Act Enforcement Rules* (水污染防治法施行細則) .

The main objectives of the amendments to the enforcement rules are as follows:

- To amend the responsibilities of the central competent authorities according to actual practices
- To clarify the constituent elements under Article 36 of the *Water Pollution Control Act* to facilitate enforcement by competent authorities of all levels
- To clarify funding sources for the Water Pollution Control Fund, including allocation of a proportion of the fines collected from violators of the *Water Pollution Control Act*

In response to the stipulations concerning bypass discharges and diluted industrial effluent laid out in Article 18-1 of the *Water Pollution Control Act*, the *Water Pollution Control Measures and Test Reporting Management Regulations* (水污染防治措施及檢測申報管理辦法) that the EPA has been implementing will henceforth be included in the enforcement rules. The management regulations cover requirements, functionality and operating standards for wastewater treatment facilities as well as bypass discharging.

Article 36 of the *Water Pollution Control Act* states that it is a crime for enterprises to discharge into soil, groundwater, or surface water, wastewater that contains substances harmful to human health in excess of the maximums stated in the Act. After close examination of the Criminal Code (中華民國刑法) and the *Code of Criminal Procedure* (刑事訴訟法) , the EPA has drafted an amendment to the enforcement rules to clarify what exactly constitutes a criminal offence. The amendment aims to protect competent authorities from being sued and caught up in time-consuming rounds of verdicts and appeals. However, the EPA is keen to stress that industrial enterprises intentionally discharge effluent illegally through bypass channels will still be penalized to the full extent of the law.

There are a total of 24 articles in the draft of the amended regulations. The main points of the amendments are as follows:

- 1) Amending the scope of the central competent authority's control over water pollution prevention fees; adding stipulations governing permit issuance, management of water pollutants, and water quality

and quantity analysis organizations by the central competent authority.

2) Adding regulations regarding equipment, functionality and operation standards of wastewater pretreatment facilities, and regulations regarding bypass discharge previously in the *Water Pollution Control Measures and Test Reporting Management Regulations*, in accordance with Article 18-1 of the *Water Pollution Control Act*.

3) Expanding the scope to which each level of competent authority may entrust its authority and contract out tasks to other governmental agencies, corporations, and organizations in accordance with the *Administrative Procedure Act* (行政程序法).

4) Clarify the constituent elements of Article 36 of the *Water Pollution Control Act*, after referring to the *Criminal Code* and the *Code of Criminal Procedure*, to mitigate possible disputes and allow for better administration of the regulations.

5) Eliminating the items that shall be stated on the operation improvement notice or document supplement/correction notice, in accordance with the promulgation of the *Water Pollution Control Act Violation Penalty Implementation Guidelines* (違反水污法按次處分執行準則) to ensure that improvements are made during the given period of time, adding penalties for cases where effluent quality worsens or if pollutant concentrations are higher than the time the improvement notice was issued.

6) Setting a proportion of violation fines collected to be allocated to the Water Pollution Prevention Fund.

Details of the proposed amendments are published on the EPA webpage <http://ivy5.epa.gov.tw/epalaw/index.aspx>.

Water

Water Pollution Control Permit Application Fee Standards Amended

On 30 September 2015, the EPA amended and promulgated the *Water Pollution Control Permit Application Fee Standards* (水污染防治各項許可申請收費標準) in response to the latest amendments to the *Water Pollution Control Act* (水污染防治法). The Standards contain eight articles, and the amendments aim to make permit application review more practical, to streamline procedures and to enhance related management through amendments to the permit application review items and fee scales.

The Standards were first announced in 1994, in accordance with Article 67 Paragraph 2 of the *Water Pollution Control Act*. They were then revised three times, and the last amendments were made 11 years ago. The latest amendments are in response to the amendments to the *Water Pollution Control Act* and the newly-added regulations regarding permits and water control measures. The amendments make changes to items such as automated monitoring of water quality and quantity; permits for trial runs and functionality testing; expert reviews; online applications; risk assessment and management reports; and fee scales.

In addition to the existing provisions by which fees are set based on the class of dedicated sewage personnel required by the law, the latest amendments make the fees for the review process more reasonable by adding new fee scales for permit applications, amendments or extensions.

As stipulated in the *Charges and Fees Act* (規費法), review costs are calculated according to a number of factors, including the complexity of the documents, the information review procedures, the cost of maintaining and managing systems and facilities, manpower hours for review procedures, and price indexes. To simplify government administration and make life easier for the public, and to encourage the switch to online

applications, the fees have been reduced for online applications. Enterprises that submit water pollution control permit applications along with applications to

discharge effluent into soil or groundwater will only be charged the higher of the two fees so as to lighten their financial burden.

Air

The EPA's Response to the Volkswagen Scandal

In the wake of the Volkswagen emissions duping scandal in the United States, on 2 October 2015 Audi Volkswagen Taiwan Co. Ltd. issued a statement detailing the types and quantities of vehicles affected in Taiwan. Preliminary estimates put the figure at 17,744 vehicles, including those made by Audi, Volkswagen, and Skoda.

The EPA will take the following actions in response to the case:

1. Providing the number of affected vehicles and the matters of concern to the vehicle owners:

a) Asking Volkswagen for a list of all affected vehicles and the names of the owners

b) Requesting Volkswagen to recall all affected vehicles and make the necessary corrections

c) Requesting Volkswagen to compensate affected Taiwan owners with the same package offered to owners in other nations

d) Establishing a dedicated webpage – <https://mobile.epa.gov.tw/> – to collect information related to the case and suggestions from owners

2. Gaining a clear picture of actual emission coefficients:

The EPA has adopted the US approach of conducting unannounced laboratory testing of samples from randomly-selected vehicles as required by law. The EPA is also employing its portable emission measurement system to measure emissions from vehicles on the road. The on-road measurement is expected to be completed by mid-October 2015.

3. Penalties to be imposed upon Audi Volkswagen Taiwan:

a) As required by law the engine emissions certification for all of the affected vehicle types will be withdrawn and emissions testing for new vehicles of the same type (including those already in use) will be conducted. The allegations of fraud brought against Volkswagen will be referred to the Prosecutors Office for further investigation.

b) Suitable penalties that accord with the *Administrative Procedure Act* (行政程序法) and the *Administrative Penalty Act* (行政罰法) are currently being discussed since Volkswagen Taiwan is suspected of fraud in the manner that it obtained



▶ The random emission testings for new vehicles of Volkswagen are conducted.

emissions certification for vehicles imported and sold in Taiwan. The government is currently drawing up estimates of penalties based on the number of affected vehicles sold.

c) Certification review for all Volkswagen vehicles involved in this fraud case is suspended and reviews for other Volkswagen vehicle models will be strengthened.

Volkswagen vehicle owners can go to the EPA dedicated webpage, <https://mobile.epa.gov.tw/>, to check whether or not their vehicle is affected. They can also check through the Audi Volkswagen Taiwan

website, <http://www.volkswagentaiwan.com.tw/check/>, by entering the vehicle identification number found on their vehicle license.

The EPA is keen to point out that the affected vehicles can still be legally driven on all of Taiwan's roads. The EPA will ask Audi Volkswagen Taiwan to submit a vehicle recall and improvement plan. Once the plan's effectiveness, processes and timetable are approved by the EPA, the affected vehicles will be recalled for improvement and the vehicle owners will not have to bear any of the related costs.

Recycling

Taiwan, US and Colombia Jointly Hold E-waste Recycling Management Partnership Conference

On 24 September 2015, the 5th International E-waste Recycling Management Partnership Conference was jointly held by the governmental environment agencies of Taiwan, the USA, and Colombia. Forty-four delegates – from governments and non-profit organizations from 17 nations in Asia, Africa, the Americas, and Oceania – met in Colombia's capital Bogota to share their experiences of electronic waste management.

Tsu-Shou Cheng (鄭祖壽), Deputy Executive Secretary of the EPA's Recycling Fund Management Board, led Taiwan's team of government personnel, academics, and experts. During his speech given at the opening ceremony on 21 September, Mr. Cheng pointed out that since 2011 the Taiwan EPA has been holding the International E-waste Recycling Management Partnership Conference and associated research activities as a part of the Taiwan-US environmental protection cooperation agreement. The conference brings together regional partners to discuss e-waste recycling management experiences and strategies. The workshops also serve as an international platform for Taiwan's expertise and efficiency in recycling to be shared with other nations.

The conference followed the same basic format as previous ones, with the first day for reports from delegates on the development and current situation in e-waste management in their respective nations. The following three days were a continuation of the main topics from last year: Building and implementing the environmentally sound management (ESM)

framework and exploring the best available technology for treating cathode ray tubes from waste television sets.

In April 2014, the EPA launched the International Environmental Partnership (IEP). As a part of this new plan, Taiwan will be sharing its knowledge and experience in environmental protection and the establishment of an effective resource recycling system with its partners. Taiwan will also be actively seeking to expand membership of the partnership so that member nations can work together in protecting the global environment. The conference in Colombia was partly a means to this end, and the four days of presentations and fruitful discussions hopefully would leave participants with greater capabilities to build effective e-waste treatment and recycling management regulatory systems when they return to their homelands.

Minister Wei Visits Dengue Fever Epidemic Areas

In September, EPA Minister Kuo-Yen Wei (魏國彥) visited the areas in Tainan City most affected by dengue fever. The visit aimed to assist the Tainan City Government in preventing the disease from spreading and to gain a better understanding of the control measures environmental personnel are implementing. Minister Wei also took the time to give words of encouragement to environmental personnel and personally supervised the elimination of mosquito breeding grounds.

On 13 September, a concerned Minister Wei met with the head of Tainan City Environmental Protection Bureau in Tainan City to discuss the area's dengue fever control measures and current difficulties. The first stop of the minister's visit was the hard-hit Central West District (1,058 cases) where he oversaw insecticides being sprayed and thanked first-line epidemic control personnel for their hard work. Minister Wei pointed out that although the emergency spraying of insecticides is useful, the best method of disease control is for local residents to actively maintain good sanitation around their homes and neighborhoods. The residents need to make totally sure that they remove all breeding grounds for mosquitoes, paying particular attention to places where water might accumulate.

Potential breeding grounds are everywhere, since dengue fever vector mosquitoes can lay their eggs in any stagnant water. The female mosquitoes often lay

their eggs in batches and the larvae can grow into mature mosquitoes in about one week. Moreover, unhatched eggs can remain dormant for up to one year. Thus it is imperative for residents in affected areas to look for any accumulated water in empty containers around their homes at least once a week, and to follow the EPA's call to "Patrol, empty, cleanup, scrub".



▶ EPA Minister Kuo-Yen Wei (second front from right) and Tainan City Mayor Ching-Te Lai (賴清德, second front from left) listen to a briefing by the Tainan City Environmental Protection Bureau.

EPA Assists Local Governments in Incinerating Crops from Polluted Land and Compensating Farmers' Losses

To safeguard the quality of farmland, the EPA has been screening areas considered to have high pollution potential and conducting ongoing soil pollution surveys. From July to August 2015, the EPA carried out farmland soil quality surveys along five irrigation systems around Changhua City (彰化市) and Hemei Township (和美鎮) in Changhua County (彰化縣). A total of 210.6 hectares of farmland was surveyed, and 54.9 hectares was found to contain levels of pollutants above the stated maximums for land that produces food. Since 8 September, the Changhua County Environmental Protection Bureau has been uprooting and incinerating all the crops produced on contaminated farmland to prevent them from entering the market.

Regarding the affected farmers' loss of income, the EPA will closely supervise the Changhua County Government to estimate the farmers' losses and submit the information to the EPA for compensation as soon as possible. Taking rice as an example, NT\$175,000 will be given to farmers for every hectare of affected paddy fields. For the income loss due to the fallow ordered for the first growing period of 2015, the Changhua County Government gave compensation to the affected farmers prior to 11 September 2015. The EPA will also be working closely with the Changhua County Government to

quickly draw up a farmland remediation plan.

The EPA is keen to stress that the amendments to the *Water Pollution Control Act* (水污染防治法) announced on 4 February 2015 will impose heavier criminal responsibility and fines to dissuade unscrupulous businesses from illegally discharging effluent into farmland. Any person found to have discharged wastewater polluted to the extent that it could harm human health is liable for criminal sentences.

News Briefs

EIA Requirement Considered for Carbon Capture and Storage Projects

On 21 January 2010, the EPA announced that carbon capture and storage (CCS) technology is one of the international options for carbon reduction. Considering that CCS might produce environmental impacts, such as leakage, geological safety, groundwater pollution, etc., there should be appropriate measures to prevent or reduce the environmental impacts caused by CCS projects. On 17 September 2015, the EPA preannounced that an environmental impact assessment has to be done for any CCS projects in accordance to Article 5 Paragraph 1 Item 11 of the *Environmental Impact Assessment Act* (環境影響評估法). Related information and details can be accessed on the EPA's website <http://ivy5.epa.gov.tw/epalaw/index.aspx>.

Green Lifestyle Handbook Published

In response to the theme of 2015 World Environment Day "Seven Billion Dreams, One Planet, Consume with Care," the EPA collaborated with the Consumer Protection Committee to publish the Green Lifestyle Handbook. The handbook provides a variety of tips and suggestions for being environmentally friendly in all six domains of everyday life: food, clothing, accommodation, transport, education and entertainment. For example, the handbook gives guidance on reducing the use of single-use products, practicing energy saving, wise consumption,

etc. The EPA hopes that the general public can read and carry out the suggestions in the handbook, so that they can protect their own consumer rights while being environmentally friendly at the same time. The handbook is on the website for download (<http://www.epa.gov.tw/lp.asp?ctNode=31646&CtUnit=1436&BaseDSD=7&mp=epa>).



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