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Feature Article

Taiwan's Advances in Sediment Management

To safeguard the quality of the sediment at the bottom of water bodies and thus protect public health, the EPA has included sediment management in the *Soil and Groundwater Pollution Remediation Act* (土壤及地下水污染整治法). Several subsidiary regulations also have been strictly enforced. However, sediment management and the associated legal infrastructure are still in their infancy in Taiwan. Thus the EPA is diligently improving the relevant legal framework. To improve sediment management, the EPA will focus on integrating and compiling all information collected by various ministries related to sediment along with sediment risk assessment capacity building.

Sediment quality is directly related to environmental and ecosystem protection. The *Soil and Groundwater Pollution Remediation Act* states that sediment quality is to be regularly monitored for four types of water bodies: rivers, lakes, reservoirs and drainage/irrigation channels. Although allowing sediment to build up at the bottom of water bodies does not pose a direct threat to human health, the long-term accumulation in sediment of pollutants from industrial activity has the potential to harm human health, since pollutants can have a magnified impact as they pass into living organisms in the food chain. Suitable management of polluted sediment

that could directly or indirectly affect the quality of freshwater food is thus necessary.

In the past, polluted sediments have posed threats of different degrees to human health in Taiwan. A survey of polluted sediments in irrigation channels showed that many local factories had discharged wastewater that entered directly into agricultural irrigation channels, and in addition, effluents from hidden pipes also drained into such channels, resulting in produce being contaminated through polluted sediment. In 2001, a major incident involving farmlands in Yunlin County (雲林縣) becoming contaminated with heavy

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metals from polluted sediments clearly demonstrated the need for sediment quality management.

Legal framework for sediment management

Amendments to Article 6 Paragraph 6 of the *Soil and Groundwater Pollution Remediation Act* announced on 3 February 2010 added the formulating, classified management and restriction use of the sediment quality indicators. The EPA has since announced a series of regulations – such as the *Regulations Governing Classified Management and Use Restrictions of Sediment Quality Indicators* (底泥品質指標之分類管理及用途限制辦法) and the *Regulations Governing Submitting Sediment Test Reports for the Reference of Industry Competent Authorities* (目的事業主管機關檢測底泥備查作業辦法) – as well as administrative guidelines such

as the *Guidelines for Writing Assessment Reports for Sediment Environmental Impact, Health Risks, Techniques, and Economic Benefits* (底泥之環境影響與健康風險、技術及經濟效益評估報告撰寫指引) and the *Guidelines for Writing Sediment Remediation Plans* (底泥整治計畫撰寫指引). In January 2014, the EPA also began requiring industry competent authorities to submit reports on testing they have conducted on water bodies under their jurisdiction.

The most important sediment management work is the establishment of sediment quality determination criteria. Since sediments of different water bodies have varying impacts upon the environment, sediment effects on human health and the ecosystem cannot be determined by a single set of benchmarks. The EPA therefore consulted sediment management strategies of more advanced nations to formulate a set of quality



▶ Water sampling



▶ Sediment sampling

indicators for preliminary screening of polluted sites. If the screening indicates that sediment and organisms might be contaminated, further risk assessments will be applied to determine the pollution potential followed by drawing up a suitable management or remediation plan.

At present, sediment quality survey and related technologies in Taiwan are still in the early stages of development, whereas in the US and EU, sediment management strategies are far more advanced. For example, for a report for the US Congress, the US EPA spent a considerable amount of resources and manpower to collect about 4.6 million data entries from more than 50,000 sites during the 1980s and 1990s. The US EPA later used the data to establish a sediment quality screening methodology and sediment screening benchmarks. In contrast, as of June 2015, Taiwan had only accumulated approximately 20,000 sediment quality data entries. Thus, after referring to the experience and methodologies of advanced nations and incorporating local environmental data, the EPA formulated the *Regulations Governing Classified Management and Use Restrictions of Sediment Quality Indicators*.

The aforementioned regulations have three main components: items and benchmarks; classified management; and use restrictions of the sediment quality indicators. The indicator items include heavy metals, pesticides, and organic compounds such as polycyclic aromatic hydrocarbons (PAH), dioxins, and plasticizers. For classified management, the sediment quality is graded as one of three grades. The industry competent authority will determine the improving measures and restrictions to be implemented according to the sediment quality grade to ensure environmental safety.

To fully implement the above regulations, the EPA – as authorized by Article 6 Paragraph 7 of the *Soil and Groundwater Pollution Remediation Act* – has formulated the *Regulations Governing Submitting Sediment Test Reports for the Reference of Industry Competent Authorities*. The regulations stipulate that industry competent authorities must conduct regular sediment quality testing in all of the water bodies within their jurisdictions at least once every five years, and must submit test reports from the previous year to the EPA by 31 March at the latest.

Sediment quality management strategies

To protect environmental quality and safeguard public health, the EPA is continuously implementing sustainable sediment quality management and developing technologies that fit local environmental characteristics. The EPA's sediment management has two major priorities:

1) Management

- Building a comprehensive regulatory infrastructure for sediment management
- Integrating sediment data obtained by various ministries

2) Technology Development

Building local capacities for sediment risk assessment and selection of remediation sites.

Implemented sediment management measures

A general introduction to the regulatory approach to building a comprehensive sediment management system has been mentioned above. Some of the more specific measures being taken include:

- 1) Integrating sediment data obtained by various ministries

In the past, Taiwan's sediment survey program lacked systematic survey data. Following the EPA's announcement of the aforementioned regulations and administrative guidelines, industry competent authorities must now test and report on sediment quality every six months. This will lead to the gradual accumulation of data on domestic sediment quality. Through data categorization, reordering and reduction, the continuously updated data fed into policymaking support systems will give government agencies a better understanding of changes and trends in sediment qualities. Linked with other environmental monitoring data, the computer modeling of water bodies can support decisions regarding suitable times to remove sediment or to conduct other management measures that may pose a threat to public health with better administrative effectiveness.

2) Local sediment remediation risk management capacity building

The EPA is currently rolling out its sediment pollution risk assessment platform that allows for input from experts in related disciplines and combines data on the physical and chemical composition of sediment; environmental, ecosystem, and public health risks; economic cost-benefit assessments; sediment remediation techniques; and data platform building. The sediment pollution platform has been established with the following objectives in mind:

- a) Assist in the sustainable management of sediment and development of assessment, management and remediation technology
- b) Build a foundation for local capacity building
- c) Establish an international cooperation mechanism to promote exchanges for sediment-related technologies and management

In the future, the EPA will seek local and international cooperation in promoting exchanges on sediment-related technology in order to cultivate local research talent and accelerate domestic sediment research, with the hope that Taiwan can become a regional

hub for sediment R&D. The EPA is also working with environmental enterprises to apply some of the promising research results in sediment remediation and risk assessment methodologies. The EPA believes that cooperation between government, industry, and academia is the most effective way to solve the problems of polluted sediment.

Expected Benefits and Overall Outlook

Since the amendments to the *Soil and Groundwater Pollution Remediation Act* in 2010, the phase-in of additional regulations and working principles has rounded out Taiwan's sediment management system. Pollution survey and assessment technologies have also been developed to meet the requirements of a more complex system. Regular sediment monitoring, which will begin in the near future, should also create a new market for related products and services. However, rapid growth will also create problems in terms of personnel capacity building and technology development and promotion, all of which need to be addressed by the EPA. The EPA expects that the goals of sustainable sediment management and developing local technology will be reached through the establishment of a sediment management system, developing pollution assessment related technology and personnel capacity building.

Climate Change

Greenhouse Gas Reduction and Management Act Promulgated on 1 July 2015

On 1 July 2015, the *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法) was officially promulgated. It provides the legal basis for combating climate change and marks the beginning of a new era in carbon reduction efforts in Taiwan. The act has been passed before a new global climate agreement is expected to be reached at the 21st session of the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC), to be held in Paris from 30 November to 11 December 2015. It is especially of significance that Taiwan demonstrates its determination to respond to global carbon reduction actions and to take on its duty to protect the environment. The act is the first law in Taiwan that clearly authorizes the government to respond to climate change. It stipulates Taiwan's carbon reduction target for the year 2050 and also lays out control targets in five-year stages based on measures that include economic incentives. Taiwan intends to move away from a free permits system for carbon emissions to one based on pricing and cap-and-trade. Reduction, adaptation, and green economic growth will be the three main axles of Taiwan's climate change response efforts.

The *Greenhouse Gas Reduction and Management Act* is composed of 34 articles in six chapters.

It clearly apportions responsibilities among central government agencies, and also has mechanisms

for including non-governmental participation and hierarchies of responsibility. The act states that the Executive Yuan is charged with bringing together central government agencies, civic groups and experts to formulate and review the allocation, integration and promotion of tasks related to greenhouse gas reduction and climate change adaptation. The act names the EPA as the central competent authority in this regard, and charges it with formulating national climate change response action guidelines and programs to reduce greenhouse gas emissions. Each of the central industry competent authorities are also responsible for drawing up their own greenhouse gas emissions action plans and establishing partnerships with local governments to jointly implement carbon reduction and climate change adaptation schemes.

The act's phased control targets and regular review mechanism are based upon those in the UK's *Climate Change Act 2008*. Other reduction management tools in the act – such as greenhouse gas inventory reporting, auditing management, efficiency standards, and cap mechanism – are all current international practices and in line with international trends. The act also covers the three emission reduction potentials suggested by the Intergovernmental Panel on Climate Change (IPCC): technology, economy, and society. In terms of technology, the act gives government agencies clearly-defined responsibilities to promote reduction strategies on raising energy efficiency,

energy saving, and developing renewable energy. In terms of economic potential, the act lays out the scope for a cap-and-trade system and leaves the door open to the eventual establishment of carbon taxes. Socially, the act calls for strengthening education and promotional campaigns to bring about positive changes in individual consumption behaviors, lifestyles, and social structure.

The EPA has set up a webpage dedicated to the *Greenhouse Gas Reduction and Management Act* on its official website (<http://www.epa.gov.tw/mp.asp?mp=ghgact>), which will be continually updated for the public to peruse information related to the act. The EPA also intends to hold a series of educational public meetings to help explain the content of the act and will improve communication with all stakeholders. The EPA will draw up regulations regarding inventory reporting and auditing management as soon as possible so that there is no disparity between the act requirements and the measures currently implemented under the *Air Pollution Control Act* (空氣污染防治法). The EPA will then begin formulating implementation rules and other measures to enhance the enforcement of the act. Hard work is needed if Taiwan is to build a cost-effective low-carbon economy, which the EPA also hopes will be built using cost-effective approaches that are effective for climate change mitigation and adaptation.

Water

Amendments to Water Pollution Control Act Enforcement Rules Preannounced

Due to 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 made corresponding amendments to the *Water Pollution Control Act Enforcement Rules* (水污染防治法施行細則). The amendments were preannounced on 3 July 2015.

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

- To amend the responsibilities that the central and local governments have toward collecting water pollution control fees
- To clarify what constitutes a criminal violation under Article 36 of the *Water Pollution Control Act* to facilitate local government law enforcement
- To clarify what part of the sources for the Water Pollution Control Fund come from certain proportions of fines collected from violations of these enforcement rules

At present, water pollution fees are collected by the central government and yet most of the money is earmarked for local governments to spend on tasks associated with preventing water pollution. The EPA has thus amended Articles 3 and 4 of the enforcement rules to clarify that local governments have the responsibility to assist in water pollution fee auditing, exhorting the payers to pay due payments, penalizing violators, implementing compulsory enforcement, and planning, managing and conducting fund use.

Article 36 of the *Water Pollution Control Act* states that it is a criminal violation for enterprises to discharge into soil, groundwater or surface water wastewater that contains hazardous substances in excess of the maximums stated in the act. After close examination of the *Criminal Code* (刑法) and the *Code of Criminal Procedure* (刑事訴訟法), the EPA amended the enforcement rules to clarify the definition of a criminal offence so that the EPA will not be inundated with cases in the future and burdened with time-consuming rounds of verdicts and appeals.

▶ Water Pollution Control Fee Reporting and Query System website (<http://wpcf.epa.gov.tw/>)

EIA

Two Environmental Impact Assessment Regulations Amended

To round out the environmental impact assessment (EIA) system and align it with domestic needs, the EPA has amended the *Environmental Impact Assessment Act Enforcement Rules* (環境影響評估法施行細則) and has completed the tenth amendment to the *Working Standards for Development Activity Environmental Impact Assessments* (環境影響評估作業準則), both coming into effect on 3 July 2015. The main reason for the amendments is to clarify procedures for public participation in the EIA and to enhance the quality of EIA statements and their subsequent review, which should lead to better implementation of review conclusions to the benefit of all.

The amendments primarily aim to increase public participation and make procedures more open so that communications become more effective, constructive, and reasonable. The EPA would also

like to see continuous two-way communications in the EIA process. The amendments further stipulate that when developers are conducting environmental surveys, they should give priority to using data

published by the government, which will both enhance assessment accuracy and reduce the time to complete surveys. As for developers that voluntarily go onto the second stage EIA, or that proceed in accordance with Attachment 2 in Article 19 of the *Environmental Impact Assessment Act Implementation Standards*, the format of the statements submitted for the first stage EIA will also be revised to improve review efficiency.

The amendments to the *Environmental Impact Assessment Act Enforcement Rules* comprise the amendments to 23 articles and the adding of two attachments, all aimed at raising environmental assessment efficiency and strengthening dialog between the public and industry competent authorities. The main amendments are as follows:

1. Clearly define the responsibilities of government agencies on EIA review and supervisory

Government agencies' responsibilities pertaining to EIA review and supervision are clearly laid out as a list. This is because the public has different understandings and opinions of the industry competent authorities and may otherwise get confused as to whether the local government or the EPA is responsible for review of the EIA of particular development projects.

2. Strengthen the role played by industry competent authorities

In the past, during the first stage of EIA, the industry competent authority merely passed on the EIA statements to the environmental agencies for review. However, the review process usually brings out many disputed points that are non-environmental in nature and yet are still expected to be dealt with by the members of the review committee. This results in long delays and some issues being dealt with inadequately, thus attracting strong criticisms. The EPA has thus amended the current regulations to stipulate that henceforth, upon receiving EIA statements from developers, industry competent authorities should first clarify which of the disputed points do not involve environmental regulations that the EPA is in charge of, and said authorities should also provide clear explanations of their policy and suggestions for the project in question. The statements can then be sent to the environmental agency for review.

3. Fulfill public participation and information transparency expectations

The amendments also include additional clarifications on how public hearings should be held, how EIA statements should be made accessible or disclosed by the developers, how the environmental competent authority should determine the scope of review meetings, and how the public hearings and site surveys should be conducted by industry competent authorities. The EPA will be asking all local governments to adopt the EPA's EIA management standards so that all EIA review information, whether reviewed by central or local governments, is accessible and transparent.

4. Add the criteria for entering the second stage EIA

In the past, a second stage EIA was only carried out if the review committee considered that the development project could have a major impact on the environment. However, in order that the EPA and local government review committees can work with the same set of standards, the EPA has added a list to the guidelines to clarify which types of developmental activity should be subject to a second stage EIA. In addition, developers that wish to voluntarily conduct a second stage EIA must commit in writing to do so before the review committee has announced its first stage review decisions. Put simply, the second stage EIA will be carried out based on review results, listing and voluntary actions.

5. Add regulations governing modifications to EIA statements

Regulations and procedures have been made more clear and detailed regarding reporting the modification to the competent authority for future reference, forms that compare original and modified EIA statements, as well as analysis reports on differing environmental impacts.

6. Add principle of recusal for review committee members

The EIA review process should always be fair and objective, and so it is required to add the principle of recusal into the organic regulations of the EPA's and the local governments' EIA review committees.

7. Enhance EIA regulations

An enhanced definition of “development permit” and its validity and recognition procedures have been added. Regulations governing items that should be included in the EIA statements and response measures have also been added.

Details of the above amendments to the two sets of regulations are available on the EPA website.

Of these, amendments to Article 5-1, Article 11-1, and Article 12 of the *Environmental Impact Assessment Act Enforcement Rules* will come into effect six months from the day of announcement; all other revisions came into effect immediately upon announcement. The EPA will simultaneously amend the *Working Standards for Developmental Activity Environmental Impact Assessments* in accordance with the amendments to the *Environmental Impact Assessment Act Enforcement Rules*.

Water

Heavier Fines Drafted for Seriously Polluted Effluent and Bypass Discharge

On 2 July 2015, the EPA pre-announced draft amendments to the *Penalty Standards for Fines for Violations of the Water Pollution Control Act* (違反水污染防治法罰鍰額度裁罰準則) that will result in major adjustments to the way fines are calculated. Total fines for violators will now be calculated by assigning points to factors, such as the type and severity of the violation, the nature of the affected water body, the size of the enterprise or wastewater treatment system, and the number of days given for improvement. The points will then be added together and multiplied by the current base penalty value to arrive at the total amount to be fined.

The latest amendments to the *Water Pollution Control Act* (水污染防治法) were announced on 4 February 2015. To deter enterprises from engaging in illegal activities, such as discharging

heavily polluted effluent bypass discharge, illegally diluting effluent, treating wastewater with inadequate facilities, or not operating wastewater treatment facilities in a normal manner, the maximum penalty



▶ Effluent discharging in Guanyin Industrial Park (觀音工業區)

impossible has been raised to NT\$20 million. The maximum fines for any other violation that leads to actual pollution have also been increased tenfold to deter future illegal acts.

In response to the much heavier fines and to provide competent authorities with legal benchmarks to assist them in levying fines in proportion to the offence, the EPA has formulated amendments to the *Penalty Standards for Fines for Violations of the Water Pollution Control Act*. In the past, fines were calculated on the basis of the size or type of the polluting enterprise, the degree to which the discharged effluent exceeded pollution control maximums, the violator's history of offences, and the nature of the waterbody or land environment affected. The new amendments also assign penalty points to the type and severity of the violation, the nature of the affected water body, the size of the enterprise or the wastewater

treatment system, and the number of days given for improvement. A table showing appropriate application of the penalty points has also been formulated. The points are then added together and multiplied by the current base penalty value to give the total amount to be levied. For cases in which effluent only slightly exceeds stated control maximums, the fines are comparable with those in the pre-amended penalty standards. However, for serious cases, such as when bypass discharge or effluent pollutants exceed stated maximums by more than fivefold, the fines will be greatly increased.

The penalty system is based upon the principle of encouraging legal activities while heavily penalizing violations, with the rationale that heavy penalties will help protect the environment and allow businesses to compete fairly.

Air

Kao-Ping Area Air Pollutant Cap-and-trade System Takes Effect

To safeguard public health, on 30 June 2011, the EPA and the Ministry of Economic Affairs (MOEA) jointly announced the implementation of the Kao-Ping (高屏) Area Air Pollutant Total Quantity Control Plan. The EPA is keen to point out that enforcing overall caps is a brand new way of tackling air pollution in Taiwan, one that combines economic incentives and pollutant reduction. Implementation of the plan will result in expediting the air quality improvement in the Kaohsiung-Pingtung (高雄、屏東) area.

The first stage of the Kao-Ping Area Air Pollutant Total Quantity Control Plan will last for three years. Existing factories in the area will first be required to apply for approval of their emission volumes, which will then become the baselines of the total quantity control system. If a factory's approved emissions exceed the threshold set by the EPA, it must reduce its emissions by 5% within three years. Implementation of the plan also means that operators of factories that are newly established or whose equipment modifications reach a certain scale, must offset their increased emissions before the factory can be fitted out. These measures will ensure that emissions of air pollutants will be gradually reduced once the caps are enforced.

Implementation of the caps will see the introduction of a system for trading emission volumes. Any enterprise that is able to adopt specific measures that reduce its

air pollutant emissions by more than the designated emission reduction target will be able to either keep the amount reduced as credit for future use or sell it through the trading system to a newly established enterprise. This approach will not only encourage existing factories to actively make reductions but will also assist in transforming the structure of industry in the Kao-Ping area.

In addition to enforcing the total air pollutants quantity control, the EPA will also be accelerating the implementation of having all diesel vehicles fitted with particulate filters, establishing clean air zones, eliminating 2-stroke motorcycles from streets, and subsidizing the purchase of new two-wheel electric vehicles to improve air quality of the Kao-Ping area in multiple ways.

Partnership for Low-carbon Technology Development Established to Combat Global Warming

On 23 June in Taipei, the EPA held the 2015 International Conference on Carbon Reduction Strategies: Partnership for Low-carbon Technologies Development. A number of foreign experts were in attendance, including representatives from the Global Environment Facility (GEF), Germany's Federal Environment Agency, the US EPA, Japan's Institute for Global Environmental Strategies (IGES), and the Global Carbon Capture and Storage Institute (GCCSI). The experts discussed topics related to worldwide trends in carbon reduction strategies, the establishment of international carbon reduction partnerships, and the development and current applications of carbon reduction technologies. They also established the Partnership for Low-carbon Technologies Development (PLCTD), which opens a new chapter in the development of regional partnerships in greenhouse gas reduction technologies.

In this opening speech, EPA Minister Kuo-Yen Wei (魏國彥) spoke of the importance of Taiwan's *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法) being passed by the Legislative Yuan on 15 June 2015. Many of the delegates, including those from Australia, Germany, and the US, congratulated Taiwan for passing the act and expressed high expectations for Taiwan's greenhouse gas reduction efforts in the future. The presentations began with a talk by Dr. Robert Dixon – the Team Leader of the GEF's Climate Change and Chemicals team – who spoke about carbon capture and storage (CCS) technologies, cooperation, and financing. He explained that CCS accounts for about 20% of global investment portfolios in global climate

change mitigation and that the success of CCS is now critically dependent on international cooperation and public support. He also pointed out that the continuing development of CCS technologies in the current stage requires lower operating costs and international or regional financing to support more R&D.

Experts from Germany, Japan and the US all reported on current trends in global carbon reduction strategies. Head of the German Emissions Trading Authority at Germany's Federal Environment Agency, Jürgen Landgrebe, said carbon trading will be a major policy tool for Germany to reach its climate target of becoming carbon neutral by the year 2050 (reducing carbon by 95%). Germany has stated its willingness



▶ 2015 International Conference on Carbon Reduction Strategies Partnership for Low-carbon Technologies Development (PLCTD)

to share its many years of experience in carbon trading management and technologies to help Taiwan with capacity and knowledge-building. Dr. Victor K. Der, the former Acting Assistant Secretary for Fossil Energy at the US Department of Energy and Global CCS Institute's General Manager for North America, spoke about the strategic development of low-carbon technologies in the US and described to the audience a number of actual cases. The Chairman of Japan's IGES, Hideyuki Mori, gave the final presentation in which he described his country's major climate change mitigation policies, including the low-carbon Yokohama Smart City Project being rolled out by

the Yokohama municipal government and some of Japan's biggest corporations.

The conference delegates all expressed their commitment to enhancing the development of low-carbon technologies and international partnerships. All the experts and representatives of international organizations – from Australia, Germany, Japan, the Philippines, the USA and Vietnam – signed the PLCTD, agreeing to strengthen greenhouse gas reduction strategies and knowledge sharing and to seek out international cooperation on low-carbon technologies.

Climate Change

International Conference Held to Share Experiences on Climate Change Adaptation

From 29 to 30 of June, the EPA held the "2015 International Symposium on Climate Change: Actions toward a Common Future." The symposium participants included climate change officers and experts from Japan, Peru, Taiwan, Thailand, the US, Vietnam, and major international organizations and think tanks. Aside from delivering presentations, the invited guests also shared their respective actions and visions in coping with climate change. More than two hundred people gathered to express their concerns about the latest global trends in climate change mitigation and adaptation.

EPA Minister Kuo-Yen Wei (魏國彥) pointed out at the symposium that extreme weather was a crisis confronting all nations and that 2015 is a critical juncture for cohesive and concerted global action. At this point many nations have consented to map out their INDCs. Minister Wei said that Taiwan is likewise in the process of formulating its own INDC, which is regarded as a positive response to the Lima Call for Climate Action. Just this summer, on 15 June 2015, the Legislative Yuan of Taiwan passed the *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法), which, in essence, was not only a mark of Taiwan's determination to partake in the global drive toward carbon emission reduction, but also established a legal basis for the actual implementation of climate change policy.

Ms. Viktoria Lovenberg, Deputy Head of the European Economic and Trade Office, extended her congratulations on the passage of the *Greenhouse Gas Reduction and Management Act* in Taiwan, and said it was ample indication of Taiwan's dedication to the reduction of greenhouse gases. As the European Union has long-term strategies in pursuing a low-

carbon future, it is quite willing to share its experiences with Taiwan, she stated. Mr. Mandeep Singh Gill, Head of the Prosperity Section of the British Office Taipei, concurred with Minister Wei in that 2015 was an important year for the global fight against climate change. The British Office Taipei particularly welcomed Taiwan's passage of the *Greenhouse Gas Reduction and Management Act* at this time, as the United Nations looks toward an international agreement on climate change at the end of this year in Paris. Climate change is a very serious challenge requiring every nation to partake in its solution, he said, and Taiwan's adoption of the *Greenhouse Gas Reduction and Management Act* was a milestone in Taiwan's response to climate change. He concluded by expressing hope that the UK and Taiwan could expand their opportunities for future cooperation in this respect.

The delegates commenced their talks with the topics of the Global Environment Facility and the promotion of the international carbon market, then went on to discuss strategies for low carbon development as well as issues related to planning and preparation of INDC.

On its part, the EPA expounded on the development of Taiwan's climate change policy, and introduced the management strategies and implementation measures in Taiwan's *Greenhouse Gas Reduction and Management Act*. The EPA's presentation not only helped the participants better understand

Taiwan's response to climate change, but also drew many precious insights and approaches for Taiwan to learn from. Further details about the symposium and other related information are available at a website dedicated to the event, <http://unfccc.saveoursky.org.tw/2015iccc/>.

News Brief

Climate Change Exhibition Opens in Changhua

On 25 June 2015, the *Leading to a Future of Our Choice: Climate Change Exhibition*, created by the EPA, opened in Xizhou Park (溪州公園), Changhua County (彰化縣). EPA Minister Kuo-Yen Wei (魏國彥), Changhua County Magistrate Ming-Ku Wei (魏明谷), legislators Ru-Fen Cheng (鄭汝芬) and Su-Yueh Chen (陳素月), and a number of foreign diplomats were also on hand to set the ball rolling. The exhibition lasted 16 days – from 25 June to 10 July – and aimed to encourage the general public to act together to protect the global environment and move toward a sustainable low-carbon future.

The exhibition, held jointly by the EPA and Changhua County government, aimed to close the urban-rural gap and raise awareness and understanding of climate change among the public in central Taiwan. The exhibition had three main themes: scientific illustrations on climate change, achievements of local low-carbon initiatives, and achievements of low-carbon community programs. The exhibition used vivid illustrations with easy to understand text to bring to life scientific knowledge of climate change so that children and adults alike could enjoy learning about the topic. Interpreters were also available for pre-arranged groups, making it a well worthwhile day out for families and student environmental field trips.



▶ The opening ceremony of *Leading to a Future of Our Choice: Climate Change Exhibition* in Changhua County (彰化縣)

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For inquiries or subscriptions to the
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Environmental Policy Monthly
Environmental Protection Administration
Office of Sustainable Development

83, Sec. 1, Jhonghua Rd.,
Taipei 100, R.O.C. (Taiwan)
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fax: 886-2-2311-5486
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