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Feature Article

# International Environmental Partnership Celebrates First Anniversary with High Achievements

To share Taiwan's environmental protection experiences with other nations and to bring in valuable expertise from overseas, on 14 April 2014 the EPA launched the International Environmental Partnership (IEP). The IEP established a multilateral and regional environmental protection platform built on the Taiwan-US bilateral environmental cooperation to facilitate more effective global environmental protection work. The areas for cooperation outlined in the IEP include climate change mitigation and adaptation, e-waste recycling and disposal, urban air quality, Asia Pacific atmospheric mercury monitoring, environmental education, environmental law enforcement, and soil and groundwater pollution remediation. Over the past year, 17 events have been held that were attended by experts from 28 nations. An exhibition showing the positive results of 2014 was jointly held by the Taiwan and US EPAs in April 2015 in Taipei. Events also held along with the exhibition included a meeting of the Global Environmental Education Partnership committee, a training workshop for environmental education seed educators, an event to promote the Cities Clean Air Partnership (CCAP) jointly held by the two EPAs and the Taichung City Government, and a Zero Waste Roundtable forum. Taiwan is fully committed to working closely with other nations to protect the global environment.

## The Launch of the IEP

The launch of the IEP was formally declared by Taiwan EPA Minister Kuo-Yen Wei – and witnessed by President Ma Ying-jeou and US EPA Administrator Gina McCarthy – on 14 April 2014. Through a task force that meets regularly to plan and promote activities, the IEP not only has strengthened the bilateral cooperation between Taiwan and the US, but has also served as the platform for multilateral and

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regional environmental partnerships that will enhance global environmental protection achievements.

## Issues and Activities

As of the end of 2014, the areas for cooperation outlined in the IEP include climate change mitigation and adaptation, atmospheric mercury monitoring, environmental education, environmental law enforcement, soil and groundwater pollution remediation, and e-waste recycling and disposal. Seventeen events were held and attended by delegates from 28 nations. Events included: in Taiwan – the First Global Environmental Education Partnership Conference, the EcoCampus Exchange, and the 2014 Pan Pacific International Conference on Climate Change Adaptation; in Vietnam – the 4th International E-Waste Management Network (IEMN) Conference and the Asia Pacific Mercury Monitoring Network Workshop; in the US – a press conference for the Cities Clean Air Partnership and a public lecture on the International Environmental Partnership and International Cooperation; in Canada – the first steering meeting of the Global Environmental Education Partnership committee; and in the Philippines – the 2014 Asia Pacific Regional Working Group Meeting on Environmental Information. The EPA also sent personnel to Indonesia to help with the Soil and Groundwater Remediation Techniques Service Project.

To illustrate IEP activities, take the Asia Pacific atmospheric mercury monitoring as an example. Taiwan assisted Vietnam and Thailand in setting up atmospheric mercury wet deposition sampling procedures. The samples collected are sent to National Central University（中央大學, in Taoyuan City）for analysis, and the results are then shared with nations through the Asia-Pacific Mercury Monitoring Network (APMMN).

Another program, the Cities Clean Air Partnerships (CCAP) aims to improve air quality in Asian Pacific cities by creating a clean air certification system for participating cities and pairing developed cities with developing cities so that they can share knowledge and experience through a peer-to-peer model.


*Minister Kuo-Yen Wei (front, first on right) and US EPA Acting Deputy Assistant Administrator Nishida (front second from right) at the IEP First Anniversary Exhibition*

## Taiwan and the US Hold Events to Share the Year's Achievements

After running for one year, to commemorate the IEP's first anniversary the Taiwan and the US EPAs organized a series of events, also hoping to see an expansion in the partnerships. Jane Nishida, the US EPA's Acting Deputy Assistant Administrator for International & Tribal Affairs, and Jared Blumenfeld, Administrator for US EPA Region 9, also came to Taiwan to share their views on the achievements gained so far. Anniversary events included a meeting of the Global Environmental Education Partnership Committee, a workshop for environmental education seed educators, a promotion event for the Cities Clean Air Partnership jointly held by the two EPAs and the Taichung City Government, as well as a roundtable forum on zero waste.

## Achievements Exhibition Attended by Dozens of Foreign VIPs

The opening ceremony for the exhibition of achievements was held on 22 April 2015, with the exhibition itself open for viewing from 22~24 April in Taipei. Dozens of foreign VIPs were in attendance, including Christopher J. Marut, Director of the American Institute in Taiwan; Ambassador Minute Alapati Taupo from Tuvalu; Ru-Fen Cheng, Convener of the Legislative Yuan's Social Welfare, Health and Environmental Committee; Jane Nishida, Acting Deputy Assistant Administrator for International & Tribal Affairs of the US EPA; and Jared Blumenfeld, Administrator of the US EPA Region 9.

## Minister Wei Expects Improvements in Global Environment and Public Health

As EPA Minister Kuo-Yen Wei pointed out in his speech at the opening ceremony, the first bilateral environmental protection cooperation agreement between Taiwan and the US was signed on 21 June 1993. Over the past 20 years the two sides have cooperated closely on more than 200 projects, and the US EPA has helped Taiwan on numerous domestic environmental issues. Minister Wei expressed his gratitude for the way that the US has selflessly shared environmental technologies and expertise with Taiwan, which has contributed to dramatic improvements in Taiwan's environment. He said Taiwan has built upon this knowledge and has gradually transformed itself from a nation that imports environmental expertise to one that exports it. Environmental pollution doesn't recognize national boundaries and hence there is no single country that can solve global environmental problems on its own. The only way forward is international partnerships and unstinting effort. This is the ideal behind the launching of the IEP in 2014, which is now a platform from which Taiwan can share its successful experiences in environmental protection and develop cooperation with other nations to improve the global environment and protect public health.

## Acting Deputy Assistant Administrator Nishida Praises Outstanding Results

In her speech at the opening ceremony, Acting Deputy Assistant Administrator Jane Nishida emphasized that US EPA Administrator Gina McCarthy and EPA Minister Kuo-Yen Wei both share a vision of the IEP acting as a platform to facilitate closer cooperation among environmental experts all over the world so that they can work together on solving the environmental challenges facing humankind. Taiwan-US cooperation has already resulted in hundreds of events being held, and IEP events have been attended by hundreds of participants from 28 nations, the importance of which to the international community is not to be underestimated.

Ms. Nishida reminded everyone to recognize that atmospheric mercury, e-waste, and air quality are issues that affect global environmental quality. She spoke on how the IEP has given Taiwan, Thailand, Vietnam, and Indonesia a head start in the field of atmospheric mercury monitoring, and she expressed the hope that these nations would assist other nations in such work. The IEP has been even more successful in the field of e-waste management, with almost 20 nations in the Asia Pacific region, Africa, North America, and Latin America now participating in e-waste partnerships. And the Cities Clean Air Partnership, which was only initiated six months previously, already has ten member cities. Ms. Nishida went on to stress that although the IEP is just getting started, it has the potential to benefit the lives of millions of people. Taking concrete action can be difficult, she said, and it may seem at this stage that IEP achievements are small, but the potential for development and action should not be easily dismissed.

## Administrator for US EPA Region 9 Stresses Importance of Clean Urban Air

Jared Blumenfeld, Administrator of the US EPA Region 9, pointed out in his opening remarks that the Cities Clean Air Partnership – one of the projects under the IEP – was initiated in August 2014 in San Francisco, making it the first Asia Pacific city to roll out an air quality certification and partnership plan. Regional Administrator Blumenfeld stressed that since air pollution is a global problem, the Cities Clean Air Partnership seeks to link the Asia Pacific region, the US, and other participating nations together using innovative systems of certification, funding, and peer-to-peer city learning programs to accelerate knowledge sharing and transfer. Since the Cities Clean Air Partnership launched in San Francisco, 10 Asia Pacific cities have joined. It is certainly an important step in the direction of better global air quality and healthier urban living environments.

## Legislator Ru-Fen Cheng Expects Further International Cooperation on Carbon Reduction

In her speech at the opening ceremony, the Convener of the Social Welfare, Health and Environmental Committee of the Legislative Yuan, Ms. Ru-Fen Cheng, noted that people in Taiwan are very concerned about the impact of $PM_{2.5}$ (fine particulate matter) on their health. She pointed out that Taiwan can learn a lot from the US as it was the first nation to regulate $PM_{2.5}$ emissions and set control standards, and has also established the PM Research Center to examine the health risks $PM_{2.5}$ poses. Ms. Cheng also mentioned that the US has invested over US$6 billion in its Climate Action Plan that involves carbon capture and storage, and that the EU's Energy Union policy includes meaningful carbon reduction pledges for the years 2020 and 2030, all of which could be models for Taiwan. She also highlighted the 20-plus years of environmental cooperation between Taiwan and the US, and expects that the implementation of the IEP plans will not only deepen the friendship between the two nations but will also benefit the whole planet through energy saving and carbon reduction.

## Looking to the Future

The IEP is planning to organize more than 30 events for 2015. These events will be opportunities for Taiwan to do things that will contribute to the international community and share its environmental protection successes with regional and global partners so that they can work together to protect the global environment.


*Dignitaries and participants at the opening ceremony of the IEP's First Anniversary Exhibition*

Air

# Sources of $PM_{2.5}$ Emissions Published

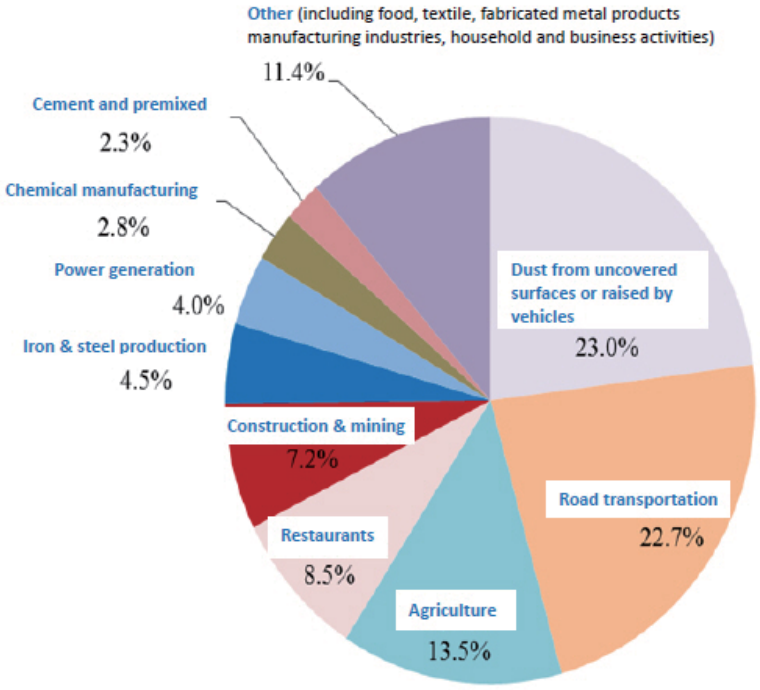
The EPA has recently published on its website an air pollutant emissions inventory covering all of Taiwan's pollution sources. Statistics show that in 2010 the total annual volume of primary $PM_{2.5}$ emissions was 73,855 tonnes, with the highest proportion, 23% or 16,865 tonnes, coming from industry.

Fine particulate matter ($PM_{2.5}$) can be divided into primary $PM_{2.5}$ – pollutants directly emitted by pollution sources – and secondary $PM_{2.5}$. Secondary $PM_{2.5}$ is formed when sulfur oxides ($SO_x$), nitrogen oxides ($NO_x$), volatile organic compounds (VOCs), ammonia, and other gaseous precursors undergo complex chemical reactions in the atmosphere. An accurate calculation of atmospheric $PM_{2.5}$ must therefore account for both primary and secondary $PM_{2.5}$.

According to the air pollutant emissions inventory data (published on the EPA website http://teds.epa.gov.tw/new_main2-0-1.htm), in 2010 the total annual primary $PM_{2.5}$ emissions comprised 73,855 tonnes, with the highest proportion coming from industry (23%, or 16,865 tonnes). Total emissions of secondary $PM_{2.5}$ precursors, $SO_x$, reached 119,720 tonnes for the year, of which industrial activity accounted for 105,261 tonnes, or 88% of the total. Total emissions of $NO_x$ were 434,160 tonnes for the year, of which industrial activity contributed 176,100 tonnes, or 41% of the total.

As the diagram below indicates, the main sources of $PM_{2.5}$ emissions nationwide are as follows:

- Dust from uncovered surfaces or raised by vehicles – 23%
- Road transportation – 22.7%
- Agriculture – 13.5%
- Restaurants – 8.5%
- Construction and mining – 7.2%
- Iron and steel production – 4.5%
- Power generation – 4%
- Chemical manufacturing – 2.8%
- Cement and premixed concrete – 2.3%
- Other – 11.4%




*Pie chart showing emission proportions of the various $PM_{2.5}$ pollution sources in Taiwan*

The statistics indicate that $PM_{2.5}$ from industrial pollution sources (including power generation) account for 23% of the national total. These same sources also produce 41% of the nation's $NO_x$ and 88% of the $SO_x$.The EPA will thus continue to strengthen controls over said sources whenever pollution-prevention technology permits and call upon industry operators to implement air pollutant reduction measures. The EPA has also asked the Ministry of Economic Affairs (MOEA) – as the industry competent authority – to provide the necessary guidance to the industries concerned.

## Water

# Central and Local Governments Join Forces to Protect Algal Reefs

To protect Taoyuan's（桃園）algal reefs – a special ecological feature of its coastline – since April 2012 the EPA and the Environmental Protection Bureau (EPB) of Taoyuan County (now Taoyuan City) have been jointly implementing the Taoyuan Algal Reef Pollution Source Inspection and Control Plan. In September of the same year, the Taoyuan EPB also initiated the so-called Owl Inspection Operation, listing the 443 pollution sources located in the upper reaches of Taoyuan's 11 river basins to be subject to pollution controls. Since then, a total of 4,882 inspections have been conducted, with 886 warnings issued, 15 enterprises forced to suspend operations, and operators of 8 enterprises placed under investigation.

To protect Taoyuan's algal reefs, the EPA and the Taoyuan EPB have been jointly implementing an algal reef pollution source inspection and control plan since April 2012. In September 2012, the Taoyuan EPB also launched its Owl Inspection Operation, which involved listing the 443 pollution sources that lie in the upper reaches of Taoyuan's 11 river basins for pollution control purposes. The 443 enterprises have been subjected to in-depth inspections and audits to ensure that pollution problems are being controlled to maintain water quality in Taoyuan's rivers and the immediate coast. If instances of illegal discharges or wastewater treatment facilities not being properly employed are uncovered, factories may face suspension of operations and their operators may be reported for criminal investigation.

Since April 2012, a total of 4,882 inspections have been conducted which led to 886 warnings being issued, 15 enterprises being forced to halt operations, and 8 enterprises being reported to the District Prosecutor's Office for criminal investigation. The penalty fines amounted to NT$138.47 million.

In addition to conducting the inspection and control plan, the Owl Inspection Operation also involves more inspections during off-peak hours such as weekends and evenings. The operation also installed more automated monitoring equipment on susceptible sections of the river as well as at the effluent discharge outlets and at rainwater sewerage of factories previously responsible for major violations. The new regime has allowed immediate, in-depth inspections to be carried out once abnormal water quality is discovered, helping prevent further illegal discharges from unscrupulous factory operators.

Water samples are also collected every week at river estuaries to test for changes in pH, temperature, electrical conductivity, and chemical oxygen demand (COD). Keeping a close eye on river water quality will allow for prompt adjustments to inspection strategies if necessary. Following the strengthening of inspection and penalty regimes, water quality test results for 2014 showed that although the proportion of heavily polluted river sections stayed the same at 6.8% for Laojie River（老街溪）, the proportion for Nankan River（南崁溪）fell from 26.5% to 16.9%. The results indicated a corresponding increase in unpolluted or lightly-polluted sections of the river. More recent water quality test results also showed that further improvements are under way.

Environmental Monitoring

# Achievements of Asia-Pacific Atmospheric Mercury Monitoring Network Published

In April 2014, the Taiwan and US EPAs established the Asia-Pacific Mercury Monitoring Network (APMMN) under the International Environmental Partnership (IEP). To mark the network's first anniversary and make the achievements to date public, on 22 April 2015 the Taiwan and US EPAs held a conference to present the achievements for further discussion.

The main purpose of the conference was to present atmospheric mercury monitoring results in the Asia Pacific region and to discuss the outcomes of Taiwan assisting Southeast Asian nations to set up atmospheric mercury wet deposition sampling procedures. Taiwan has established a mercury monitoring information and technology sharing platform so that Southeast Asian nations can readily access monitoring data, monitoring station information, and information on standardized sampling. National Central University （中央大學）is also providing an atmospheric mercury wet deposition sample and information analysis service so that all stakeholders concerned can gain a better understanding of how atmospheric mercury monitoring is being conducted in the region.

Towards delivering environmental education more effectively, the EPA also invited the faculty and students of National Central Univerity to the symposium to give them the chance to participate in discussions on environmental protection and monitoring. The EPA hopes that such discussion will enhance students' environmental monitoring knowledge and help build their capacity and influence on environmental matters.

The EPA is also keen to further promote the APMMN. To this end, the Taiwan and US EPAs will be expanding the mercury monitoring platform by offering a mercury monitoring consultation and training service and sharing the fruits of the Taiwan-US cooperation to strengthen multilateral mercury monitoring cooperation in the Asia Pacific region, in addition to enhancing Taiwan's own mercury monitoring capacity.

Ecolabeling

# Carbon Labeling Demonstration Enterprises Share Their Experiences

To promote product carbon labeling, in 2014 the EPA selected one service and two lines of products as demonstration cases and provided the enterprises with the necessary guidance in carbon labeling. On 21 April 2015, the demonstration enterprises were invited to share their experiences.

In May 2010, the EPA began accepting applications for product carbon labeling, and as of 13 May 2015, the carbon labeling of 325 products from 85 enterprises have been certified. Following the increasing concern being given internationally to global warming and related issues, in recent years several nations have started to promote product carbon labeling, in addition to managing their greenhouse gas emissions via systematic audits of emission volumes. Taiwan strives to be at the forefront of such trends. After examining the system in place in the UK, the EPA rolled out its own product carbon labeling system, becoming the 11th nation in the world to do so.

The 2014 carbon label demonstration products focused on product lines and services that would hopefully catch the eye of consumers and become a topic of conversation. The demonstration products and services were as follows:

1) Ten types of stainless steel shelves and racks manufactured by Testrite Group （特力屋集團） and Central Master Co., Ltd. （朝盟股份有限公司） Each

item has a carbon footprint of 2.6~10 kg $CO_2$e (carbon dioxide equivalent).

2) Three types of pure fermented soy sauces from Doyoubo Industry Co., Ltd.（六堆釀興業有限公司） Each bottle has a carbon footprint of 0.9-1 kg $CO_2$e.

3) The high-speed rail transportation service provided by the Taiwan High Speed Rail Corp. that has a carbon footprint of 38 g $CO_2$e per passenger-kilometer.

All enterprises that have their product carbon labeling certified also promise to reduce the carbon footprint of their products in the future. Further reductions can be achieved by improving manufacturing processes, replacing outdated equipment, sourcing more raw materials locally, deploying energy-saving lighting and reducing resource consumption.

Waste

# Urban Mining Creates Economic Value

To obtain 220 kg of gold, 150,000 tonnes of ore must be mined and smelted. In contrast, extracting the same amount of gold from recycled cellphones would require processing only about 600 tonnes of the used devices, 250 times less the mass of raw ore required. Considering that electronic waste is increasing by 4~5% annually worldwide and that a comprehensive recycling system has been established in Taiwan, coping with the continuous growth of e-waste by recovering rare metals will bring great economic benefits.

According to United Nations University statistics, the total weight of e-waste produced globally in 2014 was 41.8 million tonnes. This figure is increasing by 4~5% annually, and will reach an estimated 49.8 million tonnes by 2018. As e-waste contains heavy metals such as mercury, cadmium, and chromium, and other toxic chemicals such as chlorofluorocarbons (CFCs) and flame retardants, it must be treated carefully. However, the abundance of valuable resources in this type of waste means huge economic benefits can be reaped by recycling it effectively. The amount of global e-waste for 2014 will have contained NT$1.6 trillion worth of valuable recyclable materials including 300 tonnes of gold, 1,000 tonnes of silver, 100 tonnes of palladium, as well as copper, iron, aluminum, and plastics.

Taiwan has formulated well-developed laws and regulations pertaining to recycling, beginning in 1997 with the 4-in-1 Resource Recycling Plan that integrated local communities, recyclers, local governments, and the Resource Recycling Fund into a working recycling system to encourage public participation. Waste electronic devices and information products are now sent to recycling plants where components of value are recovered and the parts that cannot be reused are given to licensed disposal operators for proper disposal. Statistics show that in 2014 around 140,000 tonnes of waste electronic devices and information technology products were treated at 21 licensed recycling stations around Taiwan.

People in Taiwan are avid users of consumer electronics, and the EPA is thus actively asking government, industry, and research organizations to develop urban mining operations. The EPA is also encouraging members of the public to be thorough about recycling their e-waste through the various channels available (information on which can be found at the EPA website goo.gl/YJTah). Giving e-waste to licensed recyclers who can extract precious resources such as gold, silver, and palladium not only stimulates the development of venous industries but also helps the government achieve its goal of sustainable resource circulation.

Soil & groundwater

# Remediation Fund Research Projects Reach a New High in 2015

In 2015, the EPA continues to subsidize academic research bodies that are conducting soil and groundwater remediation research and a pilot study to encourage related R&D. Among the total of 53 proposals received for 2015, the EPA granted funding to 31 of them, the most ever to be approved.

Since 2010 the EPA has been subsidizing academic research bodies to conduct soil and groundwater remediation research and pilot studies. Over the past four years 90 projects have been subsidized, including 70 research projects and 20 pilot studies. These projects are divided into four major categories: 21 investigation projects, 43 remediation projects, 7 evaluation projects and 19 projects on sediment. The total amount of the subsidies reached NT$110 million. The technology developed included the screening for oil leaks by laser-induced fluorescence, environmental forensics technology, bioremediation technology and electrokinetic remediation technology. The funded projects also studied environmental liability insurance mechanisms, emerging pollutants, and bioavailabilities of sediment-associated pollutants.

The subsidized research projects have yielded fruitful results, with 29 articles published in international journals and 18 patents being applied for or granted. One of the technologies developed has already been successfully transferred to industry, with another three cases being discussed with commercial enterprises.

The EPA is hopeful that 2015 will see a continuation of the excellent achievements of the previous years, and is keen to encourage other academic research bodies to participate. After a careful evaluation of the 53 proposals received this year, the EPA granted funding to 31 of them, the most ever approved in a single year. The EPA hopes that the open call for proposals will lead to more experts and academics joining in the research to further advance Taiwan's soil and groundwater remediation technology.

Environmetal Education

# Winners of the 2015 Environmental Care Design Contest Announced

The EPA announced the winners of the 2015 Environmental Care Design Contest on 22 April 2015. The winning entries will enter Denmark's Index: Award 2015. The EPA will also subsidize the top three winners to go to Denmark to share Taiwan's experience in environmental design.

The theme of the 2015 Environmental Care Design, Challenges for Sustainability, was closely related to that of the global Index: Award 2015, Design to Improve Life. In organizing this contest, the EPA aimed to let the participants cultivate an international outlook and converge with international trends. Altogether, there were 515 contest entries in the areas of industrial design, visual design and architectural design, of which 20 entries were selected as winners. The Taiwan EPA will nominate these winners to enter Denmark's Index: Award 2015 international competition to promote international exchange and to further improve Taiwan's achievements in innovative environmental education.

The first three winning entries were: Urban green energy recycling station, Hemisphere retaining wall drainage, and the Lighting hill—creative tour with self-generating lighting system. Five other pieces were recognized with an outstanding award. The first prize winner, the Urban green energy recycling station, created a self-sufficient energy symbiotic station by systematic planning of environmental factors and natural resources. It also proposed a new style of

electricity generation by combining a vitality symbiotic system to bring together a floral market, a fair and a park to create a new living culture and space to satisfy urban residents' need for a green lifestyle.

To expand the influence of the contest, the EPA also established an Internet platform through which online voting could be conducted, thus providing the general public a chance to participate in the event. A total of 153,829 people voted in i-voting to select the top three Internet Popularity Award winners. In addition, raffle prizes were drawn to pick out 30 lucky i-voters for their participation.

The EPA hopes that, through the joint participation of the general public, the promotion of environmental education can be more than just the cultivation of the concepts of environmental care. Moreover, by harboring the concept of sustainability and adopting multidisciplinary and comprehensive thinking, the public can meet local difficulties and global challenges brought about by climate change.


*EPA Minister Kuo-Yen Wei (first on left) and Director of Trade Council of Denmark, Taipei, Linda Jakobsen (first on right) posed with the top winners at the award ceremony*

Waste

# Taiwan and US Hold Zero Waste Roundtable

Since 2014, Taiwan and the US have been promoting the International Environmental Partnership (IEP) that acts as a platform through which Taiwan can share its successful experiences in the field of environmental protection with other nations. As a part of the partnership, on 23 April 2015 the EPA held the Zero Waste Roundtable to cement a consensus on future exchanges and facilitate cooperation between the two sides as they strive towards resource recycling and zero waste.

Environmental concepts are gradually gaining ground worldwide and the demand for green manufacturing and consumption is rising correspondingly. Business models based on zero waste and sustainable development have already been adopted by many corporations to enhance their competitiveness. The Zero Waste Roundtable was thus well attended by representatives from Taiwan's government, industry, and academia, as well as by Jane Nishida, the US EPA's Acting Deputy Assistant Administrator for International & Tribal Affairs, and Jared Blumenfeld, Administrator of US EPA Region 9. Persons of note from Taiwan included Professor Hwong-wen Ma （馬鴻文）from National Taiwan

University（臺灣大學）, Associate Professor Chi-Feng Chen （陳起鳳）from Chinese Culture University（文化大學）, President Chung-Ren Chen（陳重仁）of the Taiwan Green Collar Association（台灣綠領協會）, Managing Director Engleong Goh （吳永亮） of BASF Taiwan, President Wang-Ping Ko （葛望平） of O'right （歐萊德公司）, and Director Ying-Bin Lu （呂穎彬） of the Green Energy and Environment Research Laboratories at the Industrial Technology Research Institute（工業技術研究院）. In addition to sharing zero waste approaches and achievments in Taiwan and the US, the delegates also exchanged views on forward-looking policies encompassing sustainable materials management and Cradle to Cradle design.

One of the topics discussed at the roundtable was Taiwan's disposal of sludge and construction and demolition waste. The delegates agreed that more effort should be put into making such waste and similar resources reusable through ecological or industrial recycling in order to move toward the target of zero waste. The American delegates suggested that zero waste can be facilitated through scientific analysis and public education to help manufacturers and retailers gain a full understanding of how recycling processes work and how they can reduce waste at source, which will also increase their profits by reducing costs. The roundtable was also an opportunity for both sides to share waste management information, accelerate green technology exchanges and build new channels for cooperation.

# News Briefs

## 2015 Committee Meeting for Global Environmental Education Partnership Held in Taipei

The 2015 committee meeting for the Global Environmental Education Partnership (GEEP) was held by the EPA from 23-24 April in Taipei. The meeting was an opportunity for Taiwan and the US to work with their Asia Pacific partners toward further cooperation over promoting environmental education. The meeting was attended by environmental education experts and officials, who shared their own experiences and successes in the field. The committee members also expressed their commitment to further cooperation to expedite the tasks of planning, promoting, nd implementing environmental education worldwide. ts, the government officials came from Japan, Taiwan, the US and Vietnam. Representatives of two major civil organizations, the North American Association for Environmental Education and the US National Wildlife Federation, were the other members of the GEEP committee in attendance. The meeting resulted in further steps being taken toward the formation of a task force, and in the clarification of the roles, responsibilities, and targets of the GEEP. The gathering also better enabled partner nations to formulate feasible and practical measures for


*2015 Global Environmental Education Partnership committee meeting at which EPA Minister Kuo-Yen Wei (8th from left) gave the opening speech*

the future. The delegates expressed the hope that their successful experiences in environmental education could lead to stronger regional cooperative ties in the field and be replicated all over the world, with the aim of raising environmental awareness.

## Revisions to Control Thresholds for Stationary Air Pollution Sources Preannounced

To continue improving air quality, the EPA has reviewed the control thresholds of air pollutants and formulated amendments to reduce emissions of various air pollutants and fine particulate matters ($PM_{2.5}$). The amendments took into consideration the current state of domestic air pollutant emissions along with analyses of economically viable and available technologies to arrive at reasonably lowered thresholds for emission volumes of newly established pollution sources.

As per the EPA, the main thrust of the draft amendments are to reduce the yearly allowable emission volume of particulate matters from 15 tons to 10 tons, sulfur oxides from 60 tons to 40 tons, nitrogen oxides from 40 tons to 25 tons, and volatile organic compounds from 30 tons to 10 tons. Once the amendments take effect, sources of 80% of the nation's emissions will be controlled instead of the current 60%. The EPA hopes the amendments will push enterprises to consolidate their efforts on air pollutant reduction.

## Operating Principles for Greenhouse Gas Analysis and Auditing Organizations Promulgated

To strengthen the enforcement of the *Guidelines for Greenhouse Gas Analysis and Auditing Organizations Management*, the EPA promulgated the O*perating Principles for Greenhouse Gas Analysis and Auditing Organizations* on 22 April 2015. The new principles became effective on the day of promulgation. According to the EPA, the new operating principles give environmental protection authorities more clearly defined ways to conduct inspections for greenhouse gas analysis and auditing organizations.

Based on years of inspection experiences, the EPA formulated the new operating principles by taking into account such matters as preparation work, personnel designation, target selection, inspection priorities, results determination and response. In the future, the EPA will follow the principles to reinforce inspections for greenhouse analysis and of auditing organizations to ensure the quality of data on greenhouse gas emissions. The new operating principles can be accessed at the EPA website http://ivy5.epa.gov.tw/epalaw/index.aspx/.

The framework of the *Operating Principles for the Greenhouse Gas Analysis and Auditing Organizations* consists of:

*Article 1*: Purpose

*Article 2*: Inspection target and priorities

*Article 3*: Inspection preparation and the mission of the Technical Team

*Article 4*: Inspection procedures

*Article 5-6*: Inspection items and results determination and response

*Article 7-8*: Deadlines for correction and penalties

*Article 9*: Regulations governing inspection meetings

*Appendices*:

Inspection target reporting and documents preparation

Inspection results determination table

## EPA Commends Cities and Counties with Outstanding 2014 Remediation Achievements

The EPA organized an award ceremony and site tour for Environmental Protection Bureaus with outstanding remediation performance in 2014. Minister Kuo-Yen Wei personally attended the ceremony and publicly commended the winners.

To evaluate the performance of local governments in soil and groundwater pollution remediation, all 22 cities and counties in the nation were divided into three groups in accordance with their industrial profiles and business priorities and then evaluated accordingly. Of these, Kaohsiung City（高雄市）, Yilan County（宜蘭縣） and Taipei City（臺北市）were rated as "Excellent" in their performance, while New Taipei City（新北市）, Taoyuan City（桃園市）, Tainan City（臺南市）, Hsinchu County（新竹縣）, Chiayi County（嘉義縣）, Pingtung County（屏東縣）, Keelung City（基隆市）, Chiayi City（嘉義市）and Hualien County（花蓮縣） were rated as "Good."

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