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# Environmental Policy Monthly

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## Feature Article

### Management Guidelines Established to Improve Eco-Friendliness of Large-Scale Events

There has been a remarkable increase in the number of large-scale events being held in counties and cities around Taiwan over the last few years. To minimize the environmental unpleasantness caused by these events, the EPA has drawn upon a number of regulations and formulated the *Management Guidelines for Improving the Eco-Friendliness of Large-Scale Events* (大型活動環境友善度管理指引) for organizers to refer to in order to raise the quality of events and reduce their environmental impact.

Large-scale events are being organized by government agencies, citizen groups, and companies, and may be part of celebrations that accompany traditional festivals. Such events are becoming more numerous, and are attended by considerable numbers of people. Without suitable planning, the event sites and surrounding areas can easily become defiled with unsightly waste, invariably leaving a negative impression. .

#### Guidelines formulated to protect the environment around large-scale events

In order to assist organizers of large-scale events to plan and implement appropriate measures to protect

the environment in and around their event sites, and thus improve the eco-friendliness of such events, the EPA has specially formulated the *Management Guidelines for Improving the Eco-Friendliness of Large-Scale Events*. Organizers of large-scale events now have a set of guidelines to consult whenever they are drawing up contracts or applying for permission to hold such events. The guidelines cover events that are expected to attract over 1,000 visitors, such as religious festivals, celebrations, and irregular events held to promote local tourism, etc.

To improve the eco-friendliness of such events, the parties involved should tend to the following, as permitted within the scope of their authority:

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## 1. Event holders:

Before the day of the event, proper planning and preparation for site cleanliness and tidiness, waste clearing, refuse sorting and recycling, energy conservation and carbon reduction, noise control, and public education and guidance should be undertaken. A written copy of administrative plans should be submitted to the relevant authority for approval, and channels of communication should be established. During the event, personnel should be on hand to patrol and inspect the site to ensure that all of the stipulated measures are being carried out properly. Accidents should be dealt with immediately. After the event, the site and surrounding area should be returned to its original state as stipulated in the regulations.

## 2. Site owners:

- Should review the information on event site facilities provided by the event holders. In addition to the site rental fee, a deposit shall be included to guarantee that their site is returned to its original condition after the event.

- During the event, site owners should check at regular or irregular intervals whether or not the event is being conducted as per the information provided. They should also conduct a post-event inspection of the site to ensure that it has been returned to its original condition, and then return the event holder's deposit.

## 3. Environmental protection agencies:

- Should review the waste clearing plan submitted by the event holder.

- If agreeing to a request from the event holder for the environmental protection agency to assume responsibility for waste clearing – either alone or in conjunction with the event holder – the environmental protection agency may formulate waste clearing contractor fee rates or charge the event holder for waste clearing services, as long as they accord with the regulations.

- During the event, environmental protection agencies should check at regular or irregular intervals whether or not any environmental violations are occurring.

They should also conduct a post-event inspection of the site and its surroundings to ensure that all waste has been removed and the site has been tidied up.

## 4. Other agencies involved:

Other agencies that receive requests from event holders for medical, police, or fire department support for the event should make the necessary arrangements for medical teams to be on standby, traffic controls to be in place, and fire safety checks to be made.

**Event planning needs to incorporate eco-friendliness operational targets**

A number of considerations should be incorporated into event planning to make such events more eco-friendly. Specific operational targets should include the following:

**(1) Environmental pollution prevention and maintenance of tidiness and tranquility**

1. A waste clearing plan should be formulated to ensure that litter never touches the ground and that all waste is properly cleared after the event.

2. A deposit to guarantee that the site will be restored to its original condition should be paid before the event begins. The deposit will be forfeited if the site is not cleaned according to regulations, and any additional cleaning costs incurred will be charged to the event holder.

3. If the site is designated as a no-smoking area, personnel should be on hand to prevent people from smoking. If smoking is permitted, a smoking area should be clearly indicated and ashtrays provided.

4. Leak-proof litter bins with lids should be positioned at appropriate intervals both within the site and the surrounding area.

5. Personnel should be allocated to empty trash bins at regular intervals so that they do not overflow.

6. Extra leak-proof litter bins with lids should be positioned around areas where food stalls are situated in order to maintain environmental tidiness. Goods should not be piled up by stalls, and at the closing

of business every day the food stall area should be thoroughly cleaned.

7. Food stall operators must abide by the regulations covering waste cooking oil and oil smoke.

8. Public toilets and portable toilets should have water and energy saving specifications.

9. Public toilets and portable toilets should be kept clean at all times.

10. Public toilets and portable toilets should be undamaged and fully functional.

11. Cleaning and inspection logs should be hung in visible locations in all public washrooms and portable toilets.

12. In noise control areas, at times or in areas/premises announced by the competent authority (of the municipality, city or county government), the holding of weddings, funerals, or temple celebrations, setting up of shrines, or setting off of fireworks should not be permitted.

13. If it is discovered that noise control standards are being exceeded, the positioning of loudspeakers and their noise levels should be adjusted to prevent further noise pollution from occurring.

14. Guidance in maintaining environmental sanitation and reasonable noise levels should be improved for all participants.

15. The site should be restored to its original condition within four hours of the conclusion of the event.

16. Event holders should personally follow moving events that are not held at fixed locations to ensure that all trash is removed within one hour and all locations are restored to their original condition.

#### (2) Waste reduction and recycling

1. Leak-proof recycling bins with lids should be positioned at appropriate intervals both within the site and the surrounding area.

2. Personnel should be allocated to empty recycling bins at regular intervals so that they do not overflow.

3. Waste should be divided into a minimum of three categories: recyclable resources, ordinary refuse, and food waste.

4. Efforts should be made to reduce the amounts of paper used by using signs and notice boards in and around the event site rather than flyers.

5. Efforts should be made to reduce the amounts of non-recyclable products and materials. Signs and notices should also be reusable and can be borrowed from other agencies if none are at hand.

6. Signs should be used to remind members of the public to properly recycle their waste.

7. Members of the public should be encouraged to bring their own eating utensils, cups, bags, and handkerchiefs in order to reduce the amounts of non-recyclable products that need to be provided.

8. Plastic covers for ID cards should be returned for reuse. The name of the event should not be printed on signs and notices so that they can be reused on other occasions.

9. The site should be returned to its original condition within four hours of the conclusion of the event, and all garbage and recyclables should be removed.

#### (3) Energy conservation and carbon reduction

1. Clear and comprehensive traffic directions should provide to attendees, including instructions on how to take public transport to the site (sites with at least one direct public transportation link are preferable). Bicycle rental and guidance for pedestrians should also be made available, as should shuttle buses to take attendees to nearby public transportation stations.

2. Buildings for indoor events should have a sufficient number of windows to allow the venue to be illuminated and ventilated naturally.

3. Invitations, registrations, and confirmations should all be done via the Internet.

4. The use of printed flyers and other advertising materials should be eliminated or reduced as much as possible.

- 5. The giving away of souvenirs and samples should be dispensed with whenever possible.
- 6. There should be at least one public explanation during the event for all attendees on how to create a low-carbon, eco-friendly event.
- 7. Energy-saving lighting should be adopted for illuminating the site, and if air-conditioning is deemed necessary the thermostat should be set at 26°C or above.
- 8. Planning should take into account overnight accommodation for visitors, and hotels that

- allow guests to choose not to change bed linen, towels, or personal hygiene products should be recommended.
- 9. Vegetables consumed during the event should be in season and local whenever possible. Food that is used as decoration should also be able to be consumed later.
- 10. Estimates of the event's carbon footprint should be published on the following Web site both before and after the event: <http://greenevent.epa.gov.tw/register.asp>.

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北港媽作陣造 環保真正讚

2013/03/31

名稱	北港媽作陣造 環保真正讚		
活動序號	10200317		
類型	活動		
性質	民間單位		
主辦單位	民間單位 財團法人北港朝天宮		
環保署經費	否		
舉辦場所名稱	北港國中		
地點	651雲林縣北港鎮民生路102號		
活動網址	<a href="http://2013beigang.freeworld.idv.tw/">http://2013beigang.freeworld.idv.tw/</a>		
對外開放	是		
活動時間	2013/3/31 06:00 ~ 2013/3/31 12:00		
聯絡人	張正綺	Email	lotus9916@gmail.com
聯絡電話	055373400		
活動內容說明	結合北港媽祖文化季，推廣全民體育交流，邀請全國愛好馬拉松運動跑友參與活動，提倡身心健康，促進地方觀光發展。		
餐飲與住宿	否		
活動成果	 <p>設置節能減碳、綠色消費、移動污染源等主題之宣導攤位及故事版的海報說明，讓參賽人員家屬與優先抵達終點之參賽者，可充分利用等待時間，加強環境保護觀念。民眾至各宣導攤位接受不同型式宣導完成後可獲得1張小卡，接受完成所有攤位的宣導後，可獲得1份宣導品。</p>		

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最後更新:5/7/2012 ▲TOP

Other matters that event holders should take into consideration include:

(1) During the planning stage the plan should be regularly reviewed to ensure that attainable targets for the following are included: pollution prevention; tidiness and noise reduction; refuse reduction and resource recycling; energy saving and carbon reduction; and any other eco-friendly measures.

(2) Two weeks before a large-scale event is to be held, event holders should register basic information about it on the EPA's Environmental Low-carbon Events Platform environmental low-carbon event/

low-carbon event achievements Web page. They should also use the same platform to outline how they administered eco-friendly measures and any notable successes achieved (see figure above) within one month of the conclusion of the event.

(3) If the management of the event is to be handled by another agency, the event holder should incorporate the relevant sections of the above guidelines into their contract with the agency being hired according to the nature and requirements of the event. This will help to ensure that the contracted agency implements the necessary environmental protection measures.

## Toxic Substance

# Arsenic Pentoxide and Three Other Toxic Chemicals to be Controlled

Following a Legislative Yuan review of a draft amendment to the *Toxic Chemical Substances Control Act* (毒性化學物質管理法) that involves stricter controls over Category 4 toxic substances, a consensus was reached among lawmakers from all parties and the bill was passed. While there is still on-going discussion regarding the wording of articles on the establishment of a toxic substances registration mechanism and information disclosure, the Act can be considered adequately updated.

The main purpose of the revisions is to strengthen controls over Category 4 toxic chemicals and to set up an at-source toxic substances registration system. The EPA has expressed its gratitude to lawmakers for their unanimous support for the revisions of the articles concerning Category 4 substances. As for the establishment of an at-source toxic substances registration system, since some of the wording has not yet been agreed upon, the issue will be put on the agenda the next time lawmakers convene.

The management measures that will strengthen controls over Category 4 toxic chemicals include:

- Requiring transport operators to submit online reports for approval by competent authorities that give details of consignments of toxic chemicals that they want to transport.
- Consignments of toxic chemicals will need to have toxicity and pollution prevention procedures clearly labeled, and will have to be accompanied by a safety information checklist.

· The only permitted wholesalers or other vendors of Category 4 toxic chemicals will be those approved under the stipulations of the *Toxic Chemical Substances Control Act*.

In order to better ascertain the final destinations of these toxic chemicals, the lawmakers unanimously approved regulations stipulating that enterprises that handle them will be required to present written evidence of raw materials sourcing, manufacturing, selling, and stockpiling, as well as accounts, reports, and any other information relevant to their production, sales, transport, import or export.

The EPA will continue to work closely with lawmakers to achieve the greatest possible consensus over the wording of the articles concerning an at-source toxic substances registration system and information disclosure. Establishing a functional toxic substances registration system and a comprehensive set of toxic substance control measures is in everyone's best interests.

## Stationary Source Air Pollution Emission Reporting Regulations Amended

Revisions were made to the *Regulations Governing Reporting of the Air Pollutant Emissions of Public and Private Premises* (公私場所固定污染源空氣污染物排放量申報管理辦法) due to the stated methods of calculating listed pollutant emission volumes for public and private premises being different from those in the *Air Pollution Control Fee Collection Regulations* (空污費收費辦法). This has resulted in enterprises submitting different values for the same air pollutants. The latest revisions cover the types of pollutants, adjustments to emission calculation methods, selection order, and operational methods that must be included in online emissions reports.

The EPA formulated the *Regulations Governing Reporting of the Air Pollutant Emissions of Public and Private Premises* in 2003 under authority provided by the *Air Pollution Control Act*. The emission calculation methods laid out in the regulations were drawn up after consulting the US emission reporting regimen that allows public and private premises to adopt calculation methods according to their actual emissions. Allowing enterprises to determine their own coefficient factors based upon data for their actual emissions gives the EPA a clearer picture of emissions for each category of enterprise, but also means that the EPA must stipulate selection procedures for calculation methods and related reporting and review methods.

Collection of air pollution control fees for 13 individual substances began in 2010, and in order to gain a greater understanding of data on the different types of pollutant being emitted by public and private premises, it was deemed necessary to include these 13 substances in the list of emissions reporting pollutants. A review of the *Regulations Governing Reporting of the Air Pollutant Emissions of Public and Private Premises* was also conducted to assess its appropriateness and to enhance the clarity of each of the regulations in the 14 articles, with the goal of making the emissions reporting system more complete and enforceable. The main points of the revisions are as follows:

1. Pollutants targeted by central competent authorities for air pollution control fees have been designated as pollutants for the purpose of emissions reporting.
2. Enterprises operating stationary sources that emit large volumes of pollutants due to accidental circumstances will henceforth be required to report the volumes of air pollutants emitted.

3. To accompany the addition of mass balance as an emission calculation method, the following items will also henceforth be included in air pollutant emission reporting content: raw materials; products; organic solvents; recycled raw material volumes; wastewater volumes; waste solvent volumes; solid waste volumes and the percentages by weight of VOCs contained in them; and, the percentages by weight of sulfur in combustible fuels. A further revision covers review and rectification procedures for the competent authorities under the jurisdiction of special municipality, city and county governments.

4. Calculation methods for using self-determined coefficients or coefficients announced by the EPA, and the selection order for emission calculation methods have been added. Public and private premises that employ closed gas collection systems to collect VOCs for venting will henceforth be required – following the approval of special municipality, city and county competent authorities – to calculate emission volumes based upon data obtained by monitoring or testing.

5. To accompany the announcement by the central competent authority of the *Regulations Governing Calculations for Air Pollutant Emission Volume of Public and Private Premises* (公私場所固定污染源空氣污染物排放量計算方法規定), the original formulas as stated in Articles 6-8 have been deleted.

6. The competent authorities under the jurisdiction of special municipality, city and county governments will henceforth be allowed to recalculate emission volumes, or decide on the appropriate timeframe to ask emission source owners to switch to another calculation method in the review process.

7. The competent authorities under the jurisdiction of special municipality, city and county governments will henceforth be allowed in the audit to limit the time

periods for public and private premises to submit reports on data of VOCs and emissions of large volumes of air pollutants.

8. Regulations have been added to cover items concerning daily measurements and record keeping. Public and private premises will also henceforth be required to notify the relevant competent authorities under the jurisdiction of special municipality, city and county governments of any changes to record keeping items or frequencies.

9. A revision has also been made to the period for which information on emissions submitted by public and private premises will be stored.

As the revisions will come into effect immediately after being announced, the EPA would like to remind enterprises that the new regulations will apply to the reporting for emissions for the first quarter of 2013. The EPA is hoping that the latest revisions will result in greater efficiency through emissions data from public and private premises being handled in unison by the online system.

## Water Quality

# Wastewater Management Strengthened through Revised Regulations

On 8 March 2013, the EPA announced revisions to the *Water Pollution Control Measures and Test Reporting Management Regulations*. The latest revisions will improve flow management and facility functionality, as well as enhance pollution prevention and help achieve the EPA's target of expanding continuous online pollution monitoring. The addition of a number of new management measures will raise the effectiveness of water pollution prevention efforts.

The management regulations were first promulgated in October 2006. A revision in July 2010 was aimed at strengthening the management of polluted sludge in the sewer systems of industrial parks and establishing management guidelines to effectively implement each pollution prevention measure for industrial drainage systems. Day-to-day experience has shown that some enterprises have inadequate pollution prevention facilities and may

incur serious regulatory violations when discharging large volumes of potentially polluting wastewater with complex compositions. The EPA thus felt it necessary to further strengthen prevention and monitoring measures by amending the above regulations to gain better control over water pollution at its source.

A total of eight new articles have been added, 24 articles have been revised, and three have been



▶ Wastewater pollution site

deleted. The main changes can be summarized as follows:

1. Wastewater that is treated or discharged in an unauthorized manner will be defined as rerouting discharge. A new regulation requires enterprises discovered to be using rerouting discharge to undergo normal function testing, which is a measure intended to encourage the proper use of wastewater treatment facilities and eliminate illegal discharging of effluent.

2. The revisions stipulate that pollution reduction measures for discharged wastewater should be planned according to the special nature of such pollution, and that discharged wastewater management should be enhanced to reduce pollutants flushed out by rainwater and to minimize their impact on water quality in nearby water bodies.

3. Monitoring of the premises of serious violators is to be enhanced, and premises where the wastewater (pre-) treatment facilities are found to be inadequate will be required to have monitoring/testing equipment installed. A new revision stipulates that the monitoring/testing equipment at the premises of serious violators must be continuously connected via the Internet to environmental protection bureaus of local governments, and that such equipment must be permanently installed at discharge outlets in order to achieve effective prevention management.

4. Operators who find substances in their wastewater that are not listed in the current effluent control

standards and that are scientifically determined to be potentially harmful to the ecosystem or human health must submit a pollution prevention management plan and implement effective pollution prevention.

5. The number of reports required from large-scale enterprises has been increased and a mechanism for reporting testing for acute biological toxicity has been added in order to strengthen inspection and monitoring report management.

6. Industrial parks with effluent systems permitted to drain over 2,000 cubic meters of wastewater daily, and individual enterprises/power stations with effluent systems permitted to drain over 15,000 cubic meters of wastewater daily, will henceforth be classified as targets for continuous online automatic monitoring in order to provide the authorities with real-time knowledge of wastewater discharge at these sites.

7. In order to promote the self-management of wastewater drainage systems, a new regulation stipulates that industrial parks will henceforth be required to conduct annual self-assessments.

The EPA is keen to ensure that the promulgation of the revisions will not cause undue inconvenience and has thus granted a grace period to affected enterprises while at the same time urging them to make the necessary changes at the earliest possible date. Details of the above regulations have already been published on the EPA's Web page titled New Environmental Regulations: <http://ivy5.epa.gov.tw/epalaw/>.

## Environmental Inspection

### Taiwan and US EPAs Cooperate on Regional Inspection Training

Starting on 12 March 2013, the Taiwan and US EPAs jointly held the four-day Regional National Environmental Law Enforcement Personnel and Seed Instructor Training Program. Environmental personnel from Southeast Asian nations such as Indonesia, Thailand, the Philippines, Vietnam, and Singapore came to Taiwan to receive training. Inspectors from the Taiwan EPA also attended the program, engaging in fruitful exchanges of experience and knowledge concerning environmental law enforcement with their Southeast Asian counterparts, and building a good foundation for future cooperative relationships.

The training program was one of the items agreed to as part of an existing bilateral environmental protection agreement. Under the framework of this agreement, Taiwan and the US have worked together

very closely on numerous environmental protection policies and technological advancements over the last 20 years.

The Taiwan EPA has been rolling out a number of new environmental administrative strategies over the last few years. One of these is the in-depth audit method of inspecting and auditing for polluting activities: Inspectors have been carefully examining and auditing the “three flows” of the everyday operations of suspected enterprises in order to stamp out illegal activities, and now have considerable experience doing this. The “three flows” refer to the flow of information, the flow of materials, and the flow of capital. Fines for violations are now calculated according to the following parameters, as set out in administrative law: “degree of responsibility,” “degree

of environmental impact” and “gains obtained from violating administrative law.” The financial resources of the offending enterprise are also taken into account when levying the fine. The EPA is resolute in its intention to use hefty fines that exceed any illegal gains in order to dissuade other potential violators from breaking the law. This approach has so far proven effective, and the EPA was happy to share its experience with the SE Asian trainees who attended the four-day program. The EPA is confident that the knowledge the trainees took home with them will enhance the administration of environmental protection in those nations.



▶ Minister Shen (middle) with environmental law enforcement training program instructors

## Environmental Monitoring

### “Environmental Cloud” Rolls in with “Environment Instant Messenger” App

On 11 March 2013, Minister without Portfolio San-cheng Chang and EPA Minister Stephen Shu-hung Shen jointly hosted a ceremony marking the formal start of the establishment stage for the Environmental Cloud. They also announced the debut of a new app – Environment Instant Messenger – which is the first of its kind to integrate interagency environmental information, allowing members of the public to access comprehensive environmental information at a stroke.

**B**y using this free service the public can easily access information on their local surroundings and can also set the program to download their personal preferences, such as information on duststorms, UV indices, or particulate matter

concentrations. Whenever environmental monitoring data exceeds the maximums the user has set, the Environment Instant Messenger app will automatically notify the user. In other words, the system will act as a form of early warning. The app is currently available in

two versions – iOS and Android – and is ready to be downloaded.

As Minister without Portfolio San-cheng Chang explained, of the ten government clouds currently being developed, the Environmental Cloud will be the one that integrates environmental data from all government agencies so that the data can be accessed immediately. In the past, whenever members of the public wanted environmental information, they would have to, for example, visit the EPA Web site for UV index data, the Central Weather Bureau Web site for weather forecasts, or the Soil and Water Conservation Bureau for landslide warnings. Now with the help of the Environment Instant Messenger app the whole process has been greatly simplified and all of the commonly requested environmental information is now available at a stroke. This will also allow companies to create value-added applications that will make everyone's lives easier.

EPA Minister Stephen Shu-hung Shen explained that under the framework of the Government Cloud, the EPA will be integrating environmental data from ten different agencies into the interagency Environmental Resource Database. At the same time, cloud and

mobile technology will be used to develop the Environmental Data Service Applications Plan that will take the needs and perspectives of the general public as its starting point. Besides the online Environment Instant Messenger app, in the future the EPA will also introduce other services such as the Ecological Resources Service and the Environmental Monitoring Images Service. These services will combine data concerning environmental monitoring, ecological conservation, and home and lifestyle topics to offer the public area-specific and localized information dissemination that can be accessed anywhere, anytime.

The Environment Instant Messenger app is a first glimpse of what the Environmental Cloud will be able to offer. The app has a dual-directional communication channel that allows users to submit suggestions. The EPA will go through the suggestions within three months to try and find ways to improve the service. In future, within the scope of the relevant regulations, the EPA may well adopt the open data method to provide even more environmental information and stimulate the creativity of individuals and corporations alike, so as to develop value-added applications that put resources to better use.



▶ Minister without Portfolio San-cheng Chang (3rd from right) and EPA Minister Stephen Shu-hung Shen (3rd from left) jointly hosting the ceremony marking the formal start of the Environment Cloud

## Taiwan and Germany Exchange Ideas and Experience on Low Carbon Cities

On the 12 and 14 of March, 2013, the EPA held the “Taiwan-Germany Low Carbon City Forum” in Taipei City and Tainan City, respectively, to explore the ways in which low-carbon buildings can be used to increase energy efficiency. These two forums were designed to promote the exchange of experience between Taiwan's local governments and Germany, and to implement the cities' carbon reduction strategies and execution measures.

Since 2011, the German Institute in Taiwan and the Taiwan Institute for Sustainable Energy have cooperated to launch activities pertaining to the construction of low-carbon sustainable cities. The Taiwan-Germany Forum of 2013 marked the second time that the two sides have cooperated. For this year's Forum, Mr. Michael Schafer, Berlin City Councilman and Energy Policy Spokesman for the Green Party of Germany, was specially invited along with Professor Manfred Hegger of the Department of Architecture (Energy Efficient Architectural Design Unit) of the Darmstadt University of Technology to speak on “The role that architecture plays in the future of a city – construction policy and energy conversion” and “Technical applications of high-rise and low carbon buildings: Energy + buildings' energy efficiency and production.” In addition, Mr. Ming-Chin Ho, Director of the Architecture and Building Research Institute of the Ministry of the Interior, attended to give briefings on the current status and future prospects for green buildings in Taiwan, while representatives from the city governments of Taipei and Tainan presented cases of low carbon building development at the local government level.

By the EPA's estimation, in the year 2011, Taiwan's total electricity consumption was 223,002 gigawatt hours, of which the service and residential sectors accounted for 91,297 gigawatt hours, or roughly 40.1%. Meanwhile, greenhouse gas emissions, which account for 26.1% of Taiwan's total emissions, are directly related to people's daily choices and are the target of the EPA's carbon-reduction measures. By comparison, energy consumption of buildings accounts for 40% of total energy consumption in Germany. Germany's energy-saving measures include: gradually tightening building energy efficiency standards and regulations; providing loans to encourage the renovation of old buildings; establishing dedicated training institutions; holding practical training and tests for the installation and maintenance

of rooftop solar panels, freezers, hot boilers, thermal storage facilities, and small thermoelectric symbiotic systems. In addition, steps were taken in Germany to establish a certification system to implement energy-saving measures, while setting zero-carbon criteria for public buildings in 2018 and new buildings in 2020.

Many years of experience have been amassed in Germany promoting the construction of low-carbon cities. Aside from improving the energy utilization rate and continuing to expand the application of solar, wind, and other renewable energy sources (such as hydrogen fuel), Germany also makes good use of smart grids, Information and Communication Technology (ICT), and has achieved concrete results in energy efficiency and the mitigation and adaptation for climate change.

Taiwan is a breed apart from Germany in terms of climate environments and geographical conditions. The difference in energy demands leads to different energy-saving measures, which need to suit local conditions. The EPA stressed that emphasis on public and private sector cooperation, utilization of renewable energy, and using energy-saving equipment to improve building energy consumption are still the common criteria for both nations. According to a research report issued by Charles McKenzie Associates, up to the year 2030, the cost for global carbon reduction technology will be the lowest in the residential/commercial sector. Hence, through this forum, the EPA hopes that Taiwan can learn from Germany's experiences in the development of low-carbon intelligent buildings, and couple this with its domestic advantages in green energy industries to construct good quality, low-carbon sustainable cities of Taiwan's own.



▶ Taiwan-Germany Low Carbon City Forum participants

## News Brief

### Clarifying Explanations of the “Technical Regulations of Health Risk Assessment”

With regard to the “non-relevant” principle listed in Article 12 of the “*Technological Regulations of Health Risk Assessment*,” the EPA offers official explanations to dispel any doubts that may arise. According to the EPA, the so-called “non-relevant” principle refers to one of the following conditions: 1) When the development activity does not release hazardous chemical substances up to a scale as “sufficient to cause damage,” or when the substances released do not fall into the category of “hazardous substances that may be released during operation” as specified in the affixed chart; 2) When the development activity belongs to one of the classifications of industries that may release hazardous substances during operation, but in actuality no hazardous substances have been released.

The affixed chart:

1. The definition of “release of hazardous chemical substances sufficient to cause damage during operation phase” is as follows:

(1) According to the International Agency for Research on Cancer (IARC), carcinogenic substances are

classified as Group 1, 2A and 2B. When the yearly operational volume reaches the following benchmarks: 1) Group 1: 5 kilograms; 2) Group 2A: 50 kilograms; 3) Group 2B: 500 kilograms; 4) The total operational volume of Group 1 and Group 2A reaches 50 kilograms; 5) The total operation volume of Group 1, Group 2A and Group 2B reaches 500 kilograms.

(2) For non-carcinogens the yearly operational volume has to exceed 50 tonnes.

2. Classifications of industries that may release hazardous substances during operation: (1) Metal smelting industry; (2) Electric arc furnace steelmaking industry; (3) Refining Industry; (4) Petrochemical industry; (5) Pulp industry; (6) The cement manufacturing industry; (7) The coking industry; (8) Construction or expansion of general waste or industrial waste landfills or incinerators; (9) Construction or expansion of intermediate or terminal treatment facilities that burn or bury hazardous industrial wastes (other than reusing them); (10) Construction of thermal power plants or unit-adding expansion projects thereof; (11) Fuel and coal-fired cogeneration power plants with more than fifty thousand kilowatts of installed capacity; (12) Development activity designated by the Environmental Impact Assessment Review Committee.

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