



# Environmental Policy Monthly

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## Feature Article

### New Environmental Measures Take Effect on 1 January 2016

To simplify administration for the public's convenience, the EPA announced a raft of new environmental measures that entered into effect on 1 January 2016. These include revisions to the online reporting of industrial waste, amendments to the *Regulations Governing Air Quality Models and Simulations* (空氣品質模式模擬規範), discounts on recycling fee rates for environmentally friendly products, the tightening of mercury maximums for cylindrical batteries, and the banning of chromated copper arsenate as a wood preservative.

The following are major foci of the new measures.

#### 1. Revisions to the online reporting of industrial waste

Revisions to the online reporting of industrial waste have been made to improve the accuracy of industrial waste clearance and disposal data and simplify the online verification procedure for the enterprises affected.

#### 2. Regulations Governing Air Quality Models and Simulations

The *Regulations Governing Air Quality Models and Simulations* (空氣品質模式模擬規範) cover models and simulations designed to verify that pollutant emission volumes from new or modified stationary pollution sources of a designated size do not exceed the stated maximums for the air quality control area and the air quality control areas neighboring the area where the pollution source is located. The amendments primarily add fine particulate matters into the simulation items, along with lowering the emission

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thresholds for enterprises whose emissions need to be included in the simulation in order to enlarge the simulation database.

### 3. Eligible criteria for discounted recycling fee rates tightened

To encourage manufacturers to design environmentally friendly products, the EPA tightened the eligibility criteria for discounted recycling fee rates. From 1 January 2016, only products that have the Green Mark or IT products that carry the Green Mark or the Energy-Saving Label will be eligible for reduced recycling fee rates. A 15% discount on recycling fee rates will be given to all Green Mark products, with the exception of IT products.

As for IT products, only those products that carry the Green Mark or the Energy Saving Mark will be eligible for a 30% reduction on recycling fee rates (5% for printers). Fee rates for printers are based on the status of the recycling fund and will be reevaluated every three years.

### 4. Tightening maximum mercury value for cylindrical batteries

Looking to improve the regulation of one-time

use cylindrical batteries in Taiwan, the EPA has referenced methods used by the EU, the UN and several other countries to regulate heavy metal content in dry-cell batteries. In order to diminish environmental impacts, regulations have been tightened for mercury content to 1 ppm, and new restrictions have been added for cadmium content effective 1 January 2016.

### 5. Banning the use of chromated copper arsenate as a wood preservative

Chromated copper arsenate is a water-soluble wood preservative that is composed of chrome, arsenic and copper. Weather conditions, rain and acidic soil can all cause these heavy metals to be released into the environment. Since arsenic and hexavalent chromium have been proven to be hazardous to human health and the environment, the EPA decided to tighten control over the use of chromated copper arsenate and ban its use as a wood preservative.

### 6. Reward Payment for Landfill Greenhouse Gas Reduction Promulgated

The EPA announced on 25 December 2015 the *Regulations Governing Incentives for General Waste Landfills to Reduce Greenhouse Gas Emissions* (一般廢棄物掩埋場降低溫室氣體排放獎勵辦法) .

#### New measures effective 1 January 2016

Measure	Major Amendments
Revisions to the online reporting of industrial waste	<p>The amendment of the Format, Items, Content and Frequency of Online Reporting of the Production, Storage, Clearance, Disposal, Reuse, Export and Import of Waste include:</p> <ol style="list-style-type: none"> <li>1. The online confirmation time for the waste clearance and disposal extends to four days after the wastes are cleared from the plant, changed from the original 84 hours.</li> <li>2. Barcodes are adopted for the reporting of clearance, disposal, reuse and export of wastes to streamline the process.</li> <li>3. In the event of a computer software or hardware failure, the enterprise needs only to report the situation to the local authority and no longer needs to report to the central competent authority.</li> <li>4. If, on the last day of the reporting period, the central competent authority's computer system is out of operation for over an hour, the reporting period will be automatically extended to the next work day.</li> </ol>

Measure	Major Amendments
<p><i>Regulations Governing Air Quality Models and Simulations</i> take effect</p>	<p>Strengthening regulations governing the use of air quality models and making them consonant with the addition of items to air quality standards involving fine particulate matters. The amendments also enhance the air quality simulation system overall and help prevent air pollution by strengthening source controls.</p> <ol style="list-style-type: none"> <li>1. Tightening the regulations on model operations: The Gaussian Models will be announced by the central competent authority; the Plume Trajectory Model and the Grid Cloth Model will be reviewed for each model and the simulation results must meet the evaluation standards in Appendix III.</li> <li>2. The threshold for the emissions required to be included in model simulations is lowered: The minimum emission volume of pollution sources required to be included in model simulations is set in accordance with the <i>Emission Scale of Air Pollutants from New or Changed Stationary Sources</i>. The amendments also stipulate the models that may be chosen for new or changed stationary sources whose annual permitted emission volume of pollutants are up to 250 or 500 tonnes.</li> <li>3. The duration for pattern simulation is extended: The duration for the Gaussian Model is set for three years, whereas the durations for the Plume Trajectory Model and the Grid Cloth Model are contingent upon their emission volume.</li> <li>4. Revising the methods by which the increment amount of the concentration of pollutants is calculated.</li> <li>5. Following the development of models and computer systems, and the increased data accessibility, the Plume Trajectory Model and the Grid Cloth Model user protocols are revised.</li> <li>6. Tightening the regulations on model operations: the evaluation standards for simulation model functions are tightened, and new evaluation standards are added for more pollutants. Protocols for the simulation evaluation of the meteorological model are also added.</li> </ol>
<p>Eligibility criteria for discount recycling fee rates tightened</p>	<p>The discount recycling fee rates are only given to :</p> <ol style="list-style-type: none"> <li>1. Products that obtained the Green Mark, given a discount of 15%.</li> <li>2. IT Products that obtained the Green Mark or Energy Saving Mark, given a discount of 30% (5% for printers).</li> </ol>
<p>For cylindrical batteries, maximum mercury value tightened to 1 ppm and maximum cadmium value tightened to 20 ppm</p>	<p>The EPA has amended the regulations covering restrictions on the manufacturing, import and sale of batteries. Effective 1 January 2016, the maximum mercury value for cylindrical batteries is tightened to 1 ppm and a maximum cadmium value of 20 ppm is also added. From 1 January 2017, a new set of controls on the mercury and cadmium content of button batteries will be implemented.</p>
<p>Banning the use of chromated copper arsenate as a wood preservative</p>	<p>From 1 January 2016, the use of chromated copper arsenate as a wood preservative is banned to better protect the environment.</p>

Measure	Major Amendments
Reward Payment for Landfill Greenhouse Gas Reduction Promulgated	In accordance with the recently promulgated <i>Greenhouse Gas Reduction and Management Act</i> ( 溫室氣體減量及管理法 ) which lists methane as a controlled greenhouse gas, the EPA announced on 25 December 2015 the <i>Regulations Governing Incentives for General Waste Landfills to Reduce Greenhouse Gas Emissions</i> ( 一般廢棄物掩埋場降低溫室氣體排放獎勵辦法 ). The regulations were promulgated on 1 January 2016. (See page 11 for more details)

## Climate Change

### Minister Wei Leads Taiwan's Delegation to UNFCCC COP 21

EPA Minister Kuo-Yen Wei led Taiwan's delegation to participate in the Twenty-first session of the Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC COP 21). The trip was a chance for Taiwan to demonstrate its willingness to engage in carbon reduction efforts, and to exchange ideas and strategies on environmental issues with delegates from Taiwan's diplomatic allies and other nations, thus helping to cement partnerships that will enhance the international response to climate change.

Climate change has drawn much concern around the world in recent years and the annual UNFCCC COP talks always garner broad attention. Taiwan's starting point for these talks was its experience with voluntarily responses to climate

change. Under the leadership of Minister Wei, the delegates actively participated in COP 21 and were able to tell the international community about Taiwan's achievements in reducing greenhouse gas emissions and establishing the Pan Pacific Adaptation on



▶ Minister Wei with representatives from Palau, Tuvalu, the Solomon Islands and Nauru at a discussion on "Scaling-up Small Island Developing States'/Least Developed Countries' Financial Capacity and Sustainability."

Climate Change (PPACC) partnerships with European and North American nations.

## Taiwan Soon to Formulate Responding Climate Change Strategies

On 10 December in Paris, Minister Wei gave a speech that was broadcast online, in which he outlined some of his observations from participation in COP 21. He pointed out that participation has given Taiwan an indication of the international position that Taiwan can take in future climate response efforts, which will allow Taiwan to formulate its major climate change strategies. Taiwan will also actively seek official observer status so that its domestic environmental work can gain international visibility.

As Minister Wei pointed out, COP 21 touched upon six major topics: mitigation, adaptation, losses and damage, capacity-building, financing, technology development and transfers. The Paris conference was an opportunity for Taiwan to learn what it can do – particularly in terms of mitigation and adaptation – and to clarify its status in terms of taking on some

of the workload and moving forward into the future. The outcome of the intended nationally determined contribution (INDCs) was particularly significant. The EPA will soon convene meetings with relevant ministries to discuss Taiwan's future INDC strategy in detail.

## Cooperating with Pan-Pacific Nations and MIT to Combat Climate Change

Taiwan's starting point for discussions at COP 21 was its experience with voluntary responses to climate change. The talks were also an opportunity to build upon climate change mitigation partnerships with other pan-Pacific nations. Taiwan was also able to formally announce the PPACC – which has been two years in the making – and also the signing of a collaborative agreement with the Massachusetts Institute of Technology (MIT) Center for Collective Intelligence.

On 6 December, Dr. Thomas W. Malone, the head of the MIT Center for Collective Intelligence, and his Climate CoLab team also signed a letter of intent to



► Representatives from Pacific nations celebrate the establishment of the Pan Pacific Adaptation on Climate Change (PPACC), a new international NGO.

cooperate with the EPA's Greenhouse Gas Reduction and Management Office. It made Taiwan the CoLab's first overseas station in a network that will encompass other Asian nations. Climate CoLab is building a platform that will operate using the concepts of the wisdom of crowds and open data to promote climate change adaptation in the region.

Dr. Malone pointed out that the Climate CoLab had recently formed a strategic alliance with the UN, and that cooperating with Taiwan would be its first step. The successful establishment of the PPACC and the cooperation with MIT show that Taiwan is building practical regional relationships that will help to strengthen future climate change adaptation.

### Minister Wei: COP 21 Highlights Enhanced Action and Taiwan Should Follow Suit

At a press conference held upon the delegation's return to Taiwan on 12 December, Minister Wei stressed that, Taiwan has long been working hard at protecting the global environment and the passing of the *Greenhouse Gas Reduction and Management Act* in 2015 means that Taiwan now has legally-binding long-term carbon reduction targets. The demonstration of a willingness to share the common responsibility of carbon reduction with other nations and move toward eco-friendly sustainable development has won Taiwan

plaudits from developed nations in the EU and North America. Minister Wei also conveyed his gratitude for 12 diplomatic allies of Taiwan who expressed their strong support at COP21 for Taiwan being granted observer status. Another 19 nations also sent letters to the secretariat expressing the same sentiment. In addition, the Taiwan delegation also attended 17 side events at the conference to discuss future cooperative projects as well as to make Taiwan's standpoints known.

Taiwan always has a positive and forward-looking attitude when it comes to making pledges. In addition to demonstrating its commitment to its obligations as a member of the global community, such pledges also help Taiwan gain more direct participation in international affairs and be included in the implementation of new agreements. The government sees deeper international ties as crucial to Taiwan's sustainable future and the prosperity of future generations.

The Paris Agreement placed much emphasis on the Lima-Paris Action Agenda (LPAA), which called for the formulation and implementation of concrete action plans in several areas, and that will continue to be a focus of future COPs. Minister Wei said that Taiwan should demonstrate its enthusiasm for the LPAA by formulating related strategies at an early date.

## Climate Change

# Greenhouse Gas Offset Program Management Regulations Announced

On 31 December 2015, the EPA announced the *Regulations Governing Greenhouse Gas Offset Program Management* (溫室氣體抵換專案管理辦法), which has 21 articles in total. The regulations primarily govern enterprise offset programs and the matters of concern for the central competent authority that reviews such programs. The regulations are part of the government's continuing push for voluntary emission reductions before the next emission cap phase is introduced.

In drawing up the *Regulations Governing Greenhouse Gas Offset Program Management*, the EPA referred primarily to the UN's Clean Development Mechanism and the EPA's experience in implementing the promotion of offset programs. Applications for offset schemes will be divided into "projects" and "plans" according to stated criteria, and the application rules and evaluation criteria will differ accordingly. The *Regulations Governing Greenhouse Gas Offset Program Management* also cover the

verification of emission reduction methods and approval of reduction quotas for early-stage programs and offset programs that were previously approved by the EPA in accordance with the old implementation principles.

The purpose of the offset program is to incentivize enterprises to voluntarily reduce emissions so that national reduction targets of the current phase can be met before the cap system is introduced.

## Climate Change

## Greenhouse Gas Inventory and Registration Required for Large Emission Sources

On 5 January 2016, the EPA announced the *Management Regulations Governing Greenhouse Gas Emission Inventories and Registration* (溫室氣體排放量盤查登錄管理辦法). Henceforth, Taiwan's major sources of greenhouse gas emissions will be required to conduct regular inventories of their greenhouse gas emission volumes, and have them verified and registered so that the government can keep tabs on the status of emissions. The EPA also announced the first batch of greenhouse gas emission sources that should be registered.

In accordance with Article 16 Paragraph 3 of the *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法) – and backed up by the EPA's experience in implementing the *Management Regulations Governing the Reporting of Greenhouse Gas Emissions* (溫室氣體排放量申報管理辦法) under the *Air Pollution Control Act* (空氣污染防制法) – the management regulations stipulate the inventory calculation methods for greenhouse gas emission volumes from listed sources, registration procedures, contents of reports, the auditing authority of the competent authority, and online registration and verification procedures.

The EPA also announced the *First Batch of Emission Sources Requiring Greenhouse Gas Emission Inventory and Registration* (第一批應盤查登錄溫室

氣體排放量之排放源). The two batches that were announced through the *Air Pollution Control Act* are included in the announcement. The *First Batch of Emission Sources Requiring Greenhouse Gas Emission Inventory and Registration* stipulates the emission sources for which inventories and registration are required, as well as time periods and deadlines for registration of records. The industries in the first batch were selected because of their pollutants and also for emitting CO<sub>2</sub> equivalents of over 25,000 metric tonnes annually. The EPA is asking the affected enterprises to begin implementing the new regime from the date of announcement. The EPA estimates that 269 emission sources are affected, representing over 80% of Taiwan's greenhouse gas emissions from the combustion of fossil fuels by the industrial sector and the energy sector.

## Water

## Effluent Standards Amended to Add Heavy Metal Limits for Specified Agricultural Areas

On 6 January 2016, the EPA announced revisions to six items in the *Effluent Standards* (放流水標準) to reduce the risk of farmland becoming polluted. For enterprises or operators of sewer systems in specified effluent total quantity control areas, the maximum values of cadmium, total chromium, hexavalent chromium, copper, zinc and nickel in the effluent have been tightened.

Currently, water quality of discharged effluent generally meets current control standards. However, its discharge into water bodies that have low base flows, such as irrigation ditches and some small waterways, may cause the accumulation of heavy metals and heighten the risk of contaminating irrigated farmland and agricultural produce. The EPA has thus tightened the maximum values for cadmium, total chromium, hexavalent chromium, copper, zinc and nickel in the effluent depending upon the category of specified effluent total quantity control

zones. The new values will apply to effluents that will flow through water bodies in the total quantity control zones, announced by the local competent authorities for the protection of farmland.

An effluent total quantity control zone is classified as Category 1 if the water quality of receiving water bodies in the area does not meet the quality standards for irrigation water. Once an area is announced as a Category 1 Effluent Total Quantity Control Zone, the establishment of new enterprises

or sewer systems will not be allowed. For existing enterprises, the control values for cadmium, total chromium, hexavalent chromium, copper, zinc and nickel will be the same as the standards for irrigation water quality; for existing sewer systems, the control values for these six metals will be half of those of the current effluent standards. The less strict standards for sewer systems were set to encourage existing enterprises to relocate to industrial parks.

An effluent total quantity control zone is classified as Category 2 if the water quality of receiving water bodies in the area does meet the quality standards for irrigation water. In a Category 2 Effluent Total Quantity Control Zone, the establishment of new enterprises or sewer systems will be allowed but with tightened effluent standards. The control values for cadmium, total chromium, hexavalent chromium, copper, zinc and nickel will be the same as the maximum values permitted under the current irrigation water quality standards. For new sewer systems, the control values for these six heavy metals will be half of the maximum values of the current effluent standards. For existing

enterprises and existing sewer systems, the maximum values will also be cut to half of the current effluent standards.

Several other standards have also been revised, including the *Effluent Standards* (放流水標準), the *Chemical Industry Effluent Standards* (化工業放流水標準), the *Petrochemical Industrial Parks Sewage System Effluent Standards* (石油化學專業區污水下水道系統放流水標準), the *Optoelectronic Materials and Component Manufacturer Effluent Standards* (光電材料及元件製造業放流水標準), the *Wafer and Semiconductor Industry Effluent Standards* (晶圓製造及半導體製造業放流水標準), and the *Science Park Sewer Systems Effluent Standards* (科學工業園區污水下水道系統放流水標準). Effluent standards are a form of end-of-pipe control, and the EPA is urging all enterprises to ensure that wastewater treatment facilities are operated properly and at maximum efficiency. They should also strengthen source control during the manufacturing process over waste solvents to reduce the amount of chemicals that enter wastewater treatment facilities.

## EIA

# Environmental Impact Assessment Enforcement Rules Amended

On 3 January 2016, amendments made to some articles of the *Environmental Impact Assessment Enforcement Rules* (環境影響評估法施行細則) took effect. The amendments clarify the authority and responsibilities of central and local governments toward conducting environmental assessment reviews, and lay out principles of recusal due to conflict of interest. The revised enforcement rules also mean a greater role for the industry competent authority in ensuring that the division of labor for future environmental assessment reviews is clearer and that evaluations are more trustworthy and effective.

The *Environmental Impact Assessment Enforcement Rules* (環境影響評估法施行細則) were amended on 3 July 2015, with the biggest change ever seen since the promulgation of the *Environmental Impact Assessment Act* (環境影響評估法) in 1995. Amendments to three of the articles – Article 5-1, Article 11-1 and Article 12 – came into force on 3 January 2016 while the remaining changes had come into effect on the date of announcement.

After the amendments, whenever a local government is the developer or the authority in charge of a development project that falls under the *Act for Promotion of Private Participation in Infrastructure*

*Projects* (促進民間參與公共建設法), and an environmental impact assessment review is being conducted, no representatives of government agencies should sit on the environmental impact assessment review committee. The regulations are tightened to reassure the general public that the review will not be influenced by government representatives to support a local government's policy.

In the past, the role of the industry competent authority was limited to delivering environmental assessment statements to the environmental competent authority for review. However, the review process often involves disputes over matters not environmental in nature,



but that have to be handled by the environmental impact assessment review committee, such as compensation for fishery enterprises or disputes over land expropriation. This usually results in the review process being drawn out, with less time to focus on necessary professional details.

The EPA also took into consideration that the industry competent authority is a part of the government. Therefore, the amendments stipulate that when the industry competent authority receives environmental assessment statements from the developer, it should identify points of dispute that do not come under environmental law and are thus not the concern of the environmental competent authority. It should also add explanations and suggestions about their policies toward a proposed development project before sending the statements on to the environmental competent authority for review. Having the environmental competent authority and industry competent authority cooperating closely will allow the environmental impact assessment review to proceed more smoothly and efficiently.

The amendments also clarify and put into an attachment the authority and responsibilities of central

and local governments regarding environmental impact assessment reviews. It also states that whenever a development activity involves two or more competent authorities, or is located in the jurisdiction of two or more counties, provincial cities or special municipalities, the environmental impact assessment will be reviewed by the central competent authority.

In addition, the central competent authority will also be henceforth conducting environmental impact assessment reviews for large-scale or complicated development activities, including projects involving fish harbors, yacht harbors, industrial parks of over 30 hectares in area, factories of state-run industries, cable car projects, and recreation areas in national parks or national scenic areas. Local governments will be responsible for conducting environmental impact assessment reviews for development activities of university campuses, museums, tourist hotels, hospitals, local communities, sports facilities, and other small-scale projects or projects to improve local quality of life. The elimination of all gray areas in the regulations is designed to reduce disputes over how environmental impact assessment review tasks are allocated among government institutions.

## Toxic Substance

# Regulations Governing Recordkeeping for the Handling and Release of Toxic Chemical Substances Amended

To improve the quality and accuracy of data on volumes of toxic chemical substances released, the EPA has amended the *Regulations Governing Recordkeeping for the Handling and Release of Toxic Chemical Substances* ( 毒性化學物質運作及釋放量紀錄管理辦法 ). The amendments state that, henceforth, release volumes for announced toxic chemical substances should be calculated according to stated calculation guidelines.

The main points of the amendments are as follows:

1. To improve the quality and accuracy of toxic chemical substance data, the deadline for reporting release volumes for the previous year has been changed from 10 January every year to 31 January.
2. To ensure that the affected enterprises employ the same calculation methods so that reported release volumes of toxic chemical substances will

be in line with the actual volumes released, the amendments stipulate the calculation guidelines. All affected enterprises should henceforth refer to these guidelines. After taking into account the testing technologies for different chemicals, the central competent authority has decided to announce the toxic chemical substances in batches. For toxic chemicals that have not yet been announced as such by the central competent authority, their release volume calculation method remains as stated in Article 7 Paragraph 1 of the Regulations.



▶ The EPA holds an explanation session on the reporting system for releases of toxic chemical substances.

## Toxic Substance

# Chemical Substance Registration System Taking Shape in Taiwan

Pursuant to the Regulations for *New and Existing Chemical Substances Registration* (新化學物質及既有化學物質資料登錄辦法), the EPA officially launched Taiwan's chemical substance registration system on 11 December 2014. The registration system has now been enforced for over a year. Working in close collaboration with the Ministry of Labor (MOL), the EPA has set up a one-stop, inter-ministerial processing window and has completed the validation of more than 7,000 existing chemical substances. In addition, the EPA has asked the MOL to including these substances into its inventory of existing chemical substances whose number exceed 100,000.

On 11 December 2013, the *Toxic Chemical Substances Control Act* (毒性化學物質管理法) was amended and promulgated, in which the system of source registration of chemical substances was introduced. Later, the *Registration Rules for New and Existing Chemical Substances* were formulated to facilitate the enforcement of the Act. As the number of chemical-related industries is large and the natures of their businesses are myriad, the technical requirements for review, registration and guidance of these industries are complex. As per Taiwan's governmental structure, both the EPA and the MOL have the authority and obligation to control the use of toxic chemical substances. In this respect, the two agencies' functions are somewhat duplicated. A case in point is the *Regulations on New Chemical*

*Substances Registration* (新化學物質登記管理辦法) under the *Occupational Safety and Health Act* (職業安全衛生法) of the Ministry of Labor. Thus, to save the trouble of double registering and under the coordination and mediation of the National Development Council, the EPA stepped up to set up a one-stop, inter-ministerial processing window for chemical-related industries to register information on the chemicals they use. In this way, the burden of registration on chemical-related industries is effectively alleviated.

The EPA stressed that before the end of March 2015, it had processed applications for the manufacturing or import of chemical substances filed before 11 December 2014. Over the last year, the EPA held

two technical review meetings jointly with the MOL, and invited scholars, experts and relevant competent authorities to participate in related discussions. So far the registration information of more than 7,000 chemical substances have been reviewed and validated, and the new additions were incorporated into the MOL's inventory of chemical substances originally announced in 2014. Altogether, more than 530 cases of new chemical substances have been registered.

Last year alone, the EPA had established a chemical substance registration center and installed a dedicated website to facilitate industry registration. Either through documentation or through e-mail, the EPA conducted individual counseling for more than 4,600 enterprises, held 40 sessions for legal consultations and international conferences with a total of more than 6,000 participants, while taking steps to draw up a list of common Q & A for the registration of new chemical substances. All in all, it can be said that the chemical registration system is taking shape nicely in Taiwan through genuine promotion and communication.

## Climate Change

# Reward Payment for Landfill Greenhouse Gas Reduction Promulgated

In accordance with the recently promulgated *Greenhouse Gas Reduction and Management Act* ( 溫室氣體減量及管理法 ), which lists methane as a controlled greenhouse gas, the EPA announced on 25 December 2015 the *Regulations Governing Incentives for General Waste Landfills to Reduce Greenhouse Gas Emissions* ( 一般廢棄物掩埋場降低溫室氣體排放獎勵辦法 ). The regulations were promulgated on 1 January 2016.

Landfill gas is produced by organic matter within the waste. The gas is composed of around 50% methane (CH<sub>4</sub>), along with carbon dioxide (CO<sub>2</sub>) and trace amounts of organic compounds. Methane and carbon dioxide are both on the list of controlled substances according to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. Of note, the global warming potential of methane is 25 times higher than that of CO<sub>2</sub>. To reduce methane emissions from landfills, encourage recycling and reusing, and promote the development of renewable and other energy technology, the EPA has been providing incentives for methane power generation since 1999. In accordance with the recently promulgated *Greenhouse Gas Reduction and Management Act*, which has already listed methane as a controlled greenhouse gas, the EPA formulated the *Regulations Governing Encouragements for Landfills to Reduce Greenhouse Gas Emissions* ( 一般廢棄物掩埋場降低溫室氣體排放獎勵辦法 ). The regulations entered into effect on 1 January 2016.

The EPA stresses that the new regulations focus on well-performing industries which have a contract with the owner or the manager of a landfill, to allow the said industries to install electricity-generation equipment in the landfills and utilize the methane produced from the landfill. The regulations include

eight articles covering: legal basis, requirements to receive rewards, required documents and application time, application review procedures, amounts of rewards, reward calculation methods and annual limit, and punishment for false reports. The incentives will not be given to enterprises that have received any kind of incentives or subsidies from renewable energy development or other relevant regulations. Well-performing industries are those that effectively reduce methane emissions from landfills.

The amount of reward payment is calculated as: amount of reward payment (NTD) = actual amount of electricity sold (kilowatt-hours) × 0.5 (NTD/kilowatt-hours). The maximum amount of the reward will be NTD 20 million and should not be higher than the operation cost.

Landfill gas industries that are qualified to receive reward payments have to submit applications to the central competent authority, including an application form, proof of electricity sales in the previous season, statement of electricity generated, as well as financial and operational cost analysis reports on methane-powered electricity generation equipment, audited and signed by an accountant before the end of January, April, July and October of each year.

## News Brief

### List of PCNs Announced and Volume Limits for Five Toxic Chemical Substances Tightened

In response to global trends in restrictions on polychlorinated naphthalenes (PCNs), the EPA has strengthened the management of formaldehyde, 1,2-dichloroethane, acrylamide, nonylphenol and nonylphenol ethoxylates. In addition, because the Council of Agriculture of the Executive Yuan had announced that pentabromodiphenyl ether is now banned for manufacturing, processing and importing, and because the improvement deadline for arsenic pentoxide and four other toxic chemical substances has passed, the EPA revised and announced the *Guidelines on Regulated Toxic Chemical Substances and the Management of Their Handling* (列管毒性化學物質及其運作管理事項) on 31 December 2015.

The decisions of the Seventh Conference of the Parties to the Stockholm Convention in May 2015 listed PCNs (including dichloronaphthalene, trichloronaphthalene, tetrachloronaphthalene, pentachloronaphthalene, and heptachloronaphthalene) in Annex A and Annex C as chemicals to be controlled. Since their bioconcentration characteristics also make them Class 1 toxic chemical substances under the *Toxic Chemical Substances Control Act*, the EPA has listed them as Class 1 Toxic Chemical Substances. After examining the scope of the Stockholm Convention Annex A, the EPA has added the stipulation that dichloronaphthalene, trichloronaphthalene, tetrachloronaphthalene, pentachloronaphthalene, hexachloronaphthalene, heptachloronaphthalene and octachloronaphthalene can only be used for research, experiments, education, or for the manufacturing of fluoronaphthalene, including the intermediate materials of octafluoronaphthalene.

### ▶ Amendments to the List of Controlled Toxic Chemical Substances

Item	Toxic chemical substance	Amendment
1	Dichloronaphthalene, trichloronaphthalene, tetrachloronaphthalene, pentachloronaphthalene and heptachloronaphthalene	Added to List of Class 1 Toxic Chemical Substances  List of improvement timelines added
2	Tetrachloroethylene, endosulfan (industrial grade), $\alpha$ -endosulfan, $\beta$ -endosulfan and endosulfan sulfate	Prohibited use/operations added
3	Nonylphenols (NP), nonylphenol ethoxylates, acrylamide, 1,2-dichloroethane and formaldehyde	Control concentration standards lowered  List of improvement timelines added
4	Arsenic pentoxide, diisobutyl phthalate (DIBP), molybdate red, lead sulfochromate yellow, and tris(2-chloroethyl) phosphate	List of improvement timelines deleted

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