

Major Environmental Policies

February 2022

1. EPA-ITRI Joint Efforts Create New Value from Used Lithium Batteries

In the midst of widespread electronic products, the electric car is on its way to going mainstream in the future. Based on the EPA's estimation, by 2025, Taiwan is looking at an annual output of 1,100 metric tons of waste rechargeable lithium batteries, potentially harmful to the environment if not properly disposed of. The EPA and the Industrial Technology Research Institute (ITRI) have jointly developed a new technology for waste battery disposal that is able, in low-energy-consuming and carbon-cutting ways, to extract precious metals for reuse with a tenfold increase in economic value over previous treatment methods. These metals can be reused for various purposes, creating a prospering circular economy.

Turning waste batteries to gold in the face of a booming need for batteries

In light of the booming development of electric cars and the significant demand for lithium cell anode materials, the EPA collaborated with ITRI to extract more value and purer cobalt sulfate and cobalt oxide from the black powder produced after treating waste rechargeable lithium cells. Both cobalt compounds are needed to manufacture anodes for lithium batteries. The collaboration has lasted three years, with crucial technology developed, and has now reached the mass production trial stage.

The research project utilizes thorough physical screening, extraction and purification to separate and extract critical pure compounds. The end result means local enterprises can better dispose of the 1,100 metric tons of waste rechargeable lithium cells produced every year in Taiwan. Not only are environmental harms from waste lithium batteries prevented, but a complete specialized system is set up in advance for recycling and resupply, enhancing the security of material supply for the industry.

Rechargeable lithium cells and batteries can be recharged and used repeatedly and are widely used in consumer electronics such as cellphones, cameras, laptop computers, and tablets because of their high energy density, long life cycle and low discharge rate. There is also a rising use of electric powered transport devices such as electric cars, electric scooters and electric-assist bicycles that rely on lithium batteries to store energy. All precious metals contained in these cells, including lithium, cobalt, nickel, manganese, and copper have to be imported into Taiwan. As electric motor vehicles continue to be actively promoted in Taiwan, the market for lithium cells booms, leading to a continual rise in demand for the relevant raw materials.



EPA and ITRI held a press conference on "High-value Application for Regeneration Technology of Used Lithium Batteries"

Domestic output of waste secondary lithium cells to reach 1,100 metric tons by 2025

Based on projected sales of consumer electronics and electric motor vehicles, it is estimated from calculations of product use cycles that the annual generation of waste rechargeable lithium cells in Taiwan will reach 1,100 metric tons by 2025. To keep precious metals within Taiwan's borders, the EPA began working with ITRI three years ago on early preparation and development aimed at achieving high-value reuse of precious metals and other valuable resources extracted from waste lithium batteries.

ITRI ran trials on extracting highly pure precursor compounds that are used as raw materials in anodes from waste lithium batteries. First, other metals such as iron, copper, and aluminum are effectively removed from mixed anode and cathode powders via precise physical sorting and screening. Then different reducing agents are added to compare the ratio of extracted cobalt ions with a separation and purification process via adjustment of acidity and basicity. This way, anode precursor materials are extracted from the mixture powders, separated and purified, with a cobalt extraction rate of up to 98%. The extracted cobalt is made into cobalt oxide via thermal reduction in high heat, and the finished products have a cobalt content above 71.06 wt% and impurity content below 300 ppm, which complies with the specification for industrial-grade raw materials. The last part of the research project is a mass production trial and certification of renewable products.



The finished products through newly developed technology, one of them being cobalt oxide (first from right)

New technology optimizes waste disposal and creates economic profits tenfold

ITRI explained that by using this technology, the mixed anode and cathode powders, which are of lower value, can be disposed of via separation and purification and turned into high-value cobalt oxide. Cobalt oxide is worth ten times the value of the powders. Other metals can also be extracted and reused through the same process, which increases overall economic benefits and contributes to a higher recycling rate. Aside from continual assistance for domestic enterprises for technological enhancement, other results include active facilitation of the technology through further signing memorandums with responsible enterprises.

The EPA's statistics show that in 2021 a total of 600 metric tons of rechargeable lithium cells from electric cars and motorcycles, consumer electronics, and other products using such batteries were recycled, accounting for 15% of all recycled waste batteries that year. There are 8,000 electric cars on the street of Taiwan and 500,000 electronic motorcycles have been sold, taking the electric vehicle market to an economical scale of millions. Thus the amount of waste rechargeable lithium cells in Taiwan is estimated to reach 1,100 metric tons by 2025. All six local treatment plants have a combined annual capacity of roughly 2,200 metric tons, capable of handling all the rechargeable lithium battery waste generated.

The EPA pointed out that in the past, the majority of the mixed anode and cathode powders, which contained precious metals, were exported after being treated with the shredding and disposal technology then available in Taiwan. The “black powder” left could only be used as an auxiliary material in steel refineries and was worth merely NT\$80/kg. However, with the newly developed technology involving prior sorting, screening and purification, the cobalt oxide alone is currently worth NT\$800/kg, a tenfold increase in value over the previous unrefined black powder. This price is estimated to increase rapidly depending on global demand and political and economic circumstances in production regions. Cobalt oxide is a compound required in battery production and the chemical industry, and will be reutilized in the manufacture of lithium batteries. In this way, valuable resources can be kept in Taiwan, and the high-value recycling and reutilization also makes a circular economy a reality.

Urging the public to utilize the 20,000 recycling stations across Taiwan

Prospectively, the EPA noted that the participation of all citizens in properly recycling waste batteries is required even with such a low-polluting, high-value treatment technology in place. There are now over 20,000 waste battery recycling stations across Taiwan, including at hypermarkets, supermarkets, chain convenience stores, chain retail shops for cleaning products and cosmetics, convenience stores in traffic hubs and stations, retail shops for wireless communications equipment, telecommunications stores, recycling trucks of cleaning crews, and recycling stations in villages and neighborhoods.

The public is reminded to recycle the batteries inside toys, laser pointers, calculators, remote controls, automatic massage pads, telecommunications products and all sorts of rechargeable household appliances. Rechargeable batteries must be insulated with electrical tape on both ends to prevent fires from short circuits. There are designated locations and recycling channels for motor batteries from electric cars and motorcycles. When lithium cells are taken out of electric vehicles during maintenance or when being scrapped, maintenance or repair shops or vehicle recyclers must collect and take them to waste battery recycling or disposal enterprises.

2. Monitoring Data Shows Decrease in Air Pollutant Concentration for Five Consecutive Years

The 2021 air quality monitoring data compiled by the EPA shows a downward trend of concentrations across all air pollutants for five consecutive years. The average number of days with Air Quality Index (AQI) of 100 or less, meaning in the categories of Good or Moderate AQI, exceeded 90% in 2020 and 2021. Also, there were fewer and fewer days with AQI above 100 (Unhealthy categories) in both years and zero days with AQI of 200 or higher (Very Unhealthy and Hazardous categories).

The EPA pointed out that the national PM_{2.5} concentration reached the goal of an average concentration of 15.7 µg/m³ for the whole of 2021 and the ultimate goal of an average annual concentration of 15 µg/m³ for 2020 to 2023, as set by the Executive Yuan-approved Air Pollution Control Plan. As for ozone, the average annual concentration continues to drop. Compared to recent years, in 2021 there was a significant decrease in hourly values of ozone over 120 ppb as well as a drop in 8-hour periods of ozone over 60 ppb. The number of station-days in 2021 that had an 8-hour ozone red alert showed an improvement of nearly 60% over the previous year.

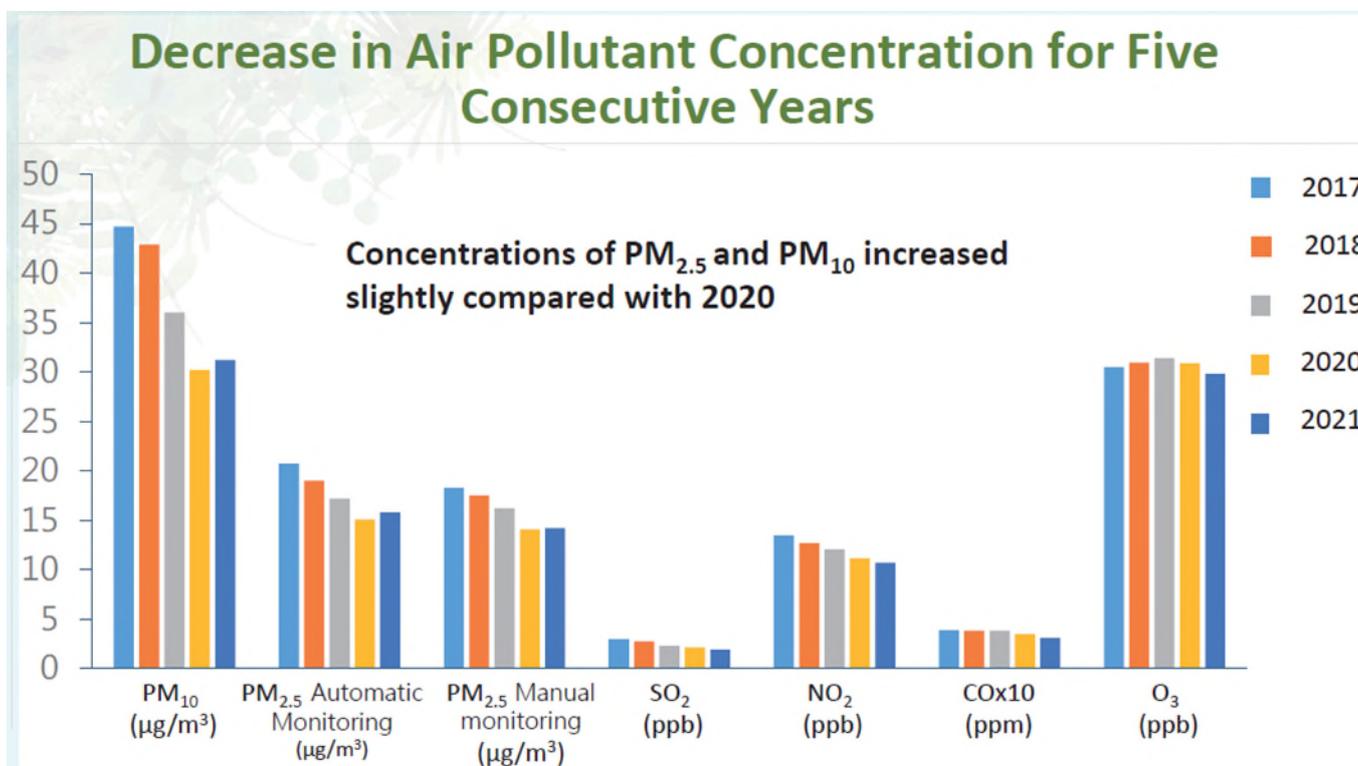
The primary cause of poor air quality in 2021 was PM_{2.5}, mostly present from January to March. Further analysis reveals poor horizontal and vertical dispersions caused by meteorological factors such as stationary air masses and low altitude of the mixing layer. Furthermore, the Central Weather Bureau monitoring data displays an increase in hours with low wind speed and a clear drop of rainfall from January to March 2021. Neither of these meteorological conditions helps disperse particulate matter, leading to increased accumulation of PM_{2.5} concentration.

The EPA noted that, since the revision of the *Air Pollution Control Act* (空氣污染防制法), it has worked on tightening control measures and evaluating 101 sets of relevant regulations as well as completing amelioration of multiple pollution sources ahead of schedule. For example, the number of Phase-1-to-3 large diesel vehicles taken off the road reached double the annual goal, and the goal of phasing out 1.2 million motorcycles has been achieved for Phase-1-to-4 motorcycles from 2020 to 2021.

For stationary sources, state-run enterprises have seen their pollution emissions reduced by 45% compared to 2016. Ninety-eight percent of their boilers listed for control have been improved. Other accomplishments include setting emission standards for hazardous air pollutants and tightening emission standards for the cement industry.

As for mobile sources, the results so far include the removal of 38% of Phase-1-to-3 high-polluting large diesel vehicles, 26% of old motorcycles, and assistance given to local governments in designating 15 air quality maintenance zones. For regulating fugitive sources, amended regulations strengthened control of the restaurant industry and construction projects. The number of airborne dust incidents in Zhuoshui River and Kaoping River dropped from nine and eight in 2020 to four and zero, respectively, in 2021.

The EPA will continue to work with other central government departments and local governments to safeguard air quality and protect public health by reducing air pollution emissions.



3. Source Controls Set in Place to Safeguard Food Safety

Food safety requires close connections and effective management among all control sectors. Since its establishment in December 2016, the EPA's Toxic and Chemical Substances Bureau (TCSB) has striven to maintain food safety with source controls by listing them for controls, conducting audits and inspections, and collaborating with other departments. The ultimate goal is for the public to spend a Lunar New Year free from worrying about food safety and health.

The EPA has announced the listing, under Class 4 toxic chemical substances, of 20 types of chemical substances (with a total of 27 specific substances) that pose potential risks to food safety, such as Rhodamine B and Sudan Red G. The listing aims to hold accountable the enterprises toward the top of the

industry chain that use these substances, and should prevent the substances from systematically entering food production chains. Based on the new regulations, enterprises are to register and label the said substances and prepare safety-related documentation and obtain approval papers for them. It is prohibited to transfer or sell these substances, including via online sales platforms.

On 16 January 2019, the amendments were completed for the *Toxic and Concerned Chemical Substances Control Act* (毒性及關注化學物質管理法), to which a chapter has been added specifically for concerned chemical substances. Recently, there has been an ongoing evaluation of five chemical substances with potential food safety risks, such as lead oxide, to determine whether to list them as concerned chemical substances for control.

For source controls on these substances with potential food safety risks, from 2017 to 2021, the EPA has been annually inspecting over 3,000 enterprises handling chemical ingredients, helping enterprises with voluntary controls, and conducting joint inspections with other departments during holidays. Furthermore, enterprises that sell food additives were screened out as targets for joint inspections in 2018 and 2020.

The EPA stated that it would continue working with the Ministry of Health and Welfare (MOHW) and the Council of Agriculture (COA) to safeguard food safety so as to protect producers' rights and consumers' health. The work extends from environments at the origin of the food production chain, to the chemical ingredient industry, products from farms, livestock, aquafarms, markets, production sites, and even dining tables. Moreover, deputy administrators or ministers from the three departments jointly hold a seasonal meeting to coordinate environmental protection and food safety, discuss relevant information in real time, and carry out needed measures in advance. Continual monitoring is conducted regarding high-risk regions, and all three departments will be notified immediately if contamination risks to environments, agricultural, livestock, aquaculture products, or the food production chain are found. Measures such as joint monitoring, source tracing, sampling, or emergency response, will then be taken to ensure environmental and food safety for all produce and food products.

The EPA emphasized that it will continue inter-ministerial cooperation and strengthen the production management of all links in the food chain from farm to table in 2022, so as to prevent food from being contaminated during production, and to safeguard the health of residents as they welcome a good New Year.

Maintaining food safety with source controls by listing them for controls, conducting audits and inspections, and collaborating with other departments

Announced	2017.9.26	13 toxic chemicals including Rhodamine B	Listing for controls
	2018.6.28	14 toxic chemicals including Sudan Red G	
	2021.8.20	Hydrofluoric Acid (Hazardous Concerned Chemical Substances)	
Continuous evaluation	lead monoxide · lead oxide · Sodium Thiocyanate · Sodium sulfide 及 · β-Naphthol		

labels required

Reporting

Banning sold online

License



4. Enterprises with Excellent Recycling Performance Awarded for Improvements and Innovations in the Industry

The Office of Resource Circulation was set up in July 2021 to gradually promote full recycling so as to maximize recycling and minimize waste disposal. Meanwhile, well-performing enterprises are to be chosen as models to encourage other enterprises in Taiwan to actively participate in recycling. This helps reduce resources lost from linear production or service patterns and creates new economic value by incentivizing private manufacturers and service industries to participate in the circular economy. Model examples set by the well-performing enterprises also encourage colleagues to upgrade their technology or use renewable materials, ultimately facilitating resource recycling in Taiwan.

The EPA has been acknowledging enterprises for their excellent performance in resource recycling since 2018, to date selecting a total of 75, with 36 receiving the two-star award, the highest honor, and 39 the one-star award. All of them are committed to striving for environmental sustainability and revival. Under active governmental effort to facilitate a circular economy, the awarded enterprises are all eager to make changes, upgrade technologically, conduct innovative research, and share their successes to create growth and development in all of Taiwan's industries.

The EPA expressed that the award recipients have all proven to be outstanding in their own way over the years. For instance, the Heping Plant of Taiwan Cement has formed a closed circular system encompassing the industrial harbor, the Heping Power Plant, and the cement plant. Pipeline connections allow raw ingredients, fuels and wastes to be shared among the three sites. The harbor supplies raw ingredients needed for cement production to the cement plant and ships out the finished products, resulting in lower carbon emissions. All of the coal ash from the power plant is transported to the cement plant as a component for cement.

Guantian Black Gold has transformed waste shells of water caltrop, a primary regional plant eaten as food, into high-value products. Through carbonization, shells are turned into coals, used in objects such as filters in air purifiers, bio-charcoal for agricultural purposes, or products that absorb moisture and reduce odors. The heat generated from the carbonization process can also be recycled. In addition, the weak-base water used to clean the shells can be used in blue dyeing afterwards. Local communities have collaborated with different industries to develop business opportunities, such as organizing interesting local tours that also promote the idea of recycling.

Last but not least, PackAge+ provides a business model of circular services, giving consumers better and environmentally friendlier options for online shopping. Packaging materials from online shopping platforms are rented and shared among online stores, consumers, and return channels. These materials, made of recycled plastic bottles and waste glass, can be used repeatedly over 50 times, drastically cutting down the use of single-use packaging materials.

Via green designs, upgraded renewable technology, increased recyclability, and modified manufacturing processes, more and more enterprises are actively participating in circular rentals, working to extend the life cycles of their own products, and utilizing renewable and recycled raw materials. Accomplishments of these awarded enterprises have been compiled into a book to share their processes in advocating and facilitating resource recycling.



Enterprises with excellent recycling performance awarded

5. Two Incentive Measures Promulgated for Replacing Old Motorcycles

The EPA subsidizes NT\$2,000 per vehicle for motorcycle owners to phase out motorcycles manufactured before 30 June 2007. If the public replaces old motorcycles with electric ones and agrees to have greenhouse gas reduction benefits vested in the EPA, an additional bonus of NT\$1,000 will be provided. The two incentive measures announced are effective from 1 January 2022 to 31 December 2023. Qualified applicants can submit their applications at the EPA's Recycling of End-of-life Vehicles website (<https://epamotor.epa.gov.tw/people/OneStepServiceIndex.aspx>).

Since 2020 when the EPA began to encourage the public to replace motorcycles manufactured before 30 June 2007, more than 1.2 million units have been replaced, which equals a quarter of the nation's old motorcycles and a 14% reduction of emissions from motorcycles, benefitting the improvement of air quality. Considering that 3.54 million aging motorcycles with higher pollutant emissions remain on the streets, continuous encouragement to phase-out old motorcycles is necessary.

In addition, replacing fossil fuel-burning motorcycles with electric ones brings carbon reduction benefits. In accordance with the *Offset Principles for the Increased Greenhouse Gas Emission Caused by Development Activities* enacted by the EPA in 2020, the carbon reduction benefit of replacing each aging motorcycle is approximately 2.3 metric tons of carbon dioxide equivalents, which can serve as a source for large-scale development projects that have passed the environmental impact assessment (EIA) to obtain offsets for the increased greenhouse gas emission.

According to the EPA, a plan for obtaining greenhouse gas offset must be proposed by the EIA-qualified development projects and approved by the EPA before being implemented, and to encourage the public to replace aging motorcycles with electric ones, future development entities or local governments should grant at least NT\$1,000/vehicle upon obtaining the carbon reduction benefits from replacing each old motorcycle with an electric one. At present, the implementation plans of the development entities have yet to be sent to the EPA, so the EPA has specified in the *Regulations Governing Incentives for Replacing Old Motorcycles with Electric Motorcycles to Reduce Greenhouse Gas* (hereinafter as the *Regulations*) that NT\$1,000 reward/vehicle shall be given to those who agree to have the greenhouse gas reduction benefits from replacing old motorcycles with electric ones vested in the EPA, in addition to the NT\$2,000/vehicle for replacing old motorcycles and the original NT\$300 incentive refund/vehicle, totaling NT\$3,300/vehicle, from 1 January this year to the end of 31 December next year.

In consideration of the plans to obtain carbon reduction benefits by replacing aging motorcycles with electric ones to be proposed by EIA-qualified development entities or local governments in the future, those who have acquired electric motorcycles previously may also choose to receive first a subsidy of NT\$2,300/vehicle for scrapping and recycling aging motorcycles, and later submit the application online for the NT\$1,000 reward/vehicle before 10 January 2024 with the receipt from the purchase of a new electric motorcycle under the *Regulations*.

6. 1,000 Green Points Awarded Upon Purchasing Green Products during Lunar New Year

The EPA has stepped up green consumption rewards during Lunar New Year by granting 1,000 green points per item, whether the purchase of green products is made in hypermarkets or convenience stores with reward points. Open the Green Point App to search among nearly 2,000 green products such as home appliances, cleaning products, tissue papers, thermo mugs, office stationery, and food products bearing the Green Mark, carbon footprint labels, MIT smile logos, organic agricultural product labels, CAS Taiwan premium agricultural product labels, and traceable agricultural product labels.

The EPA stated that nationwide chain stores and online businesses have successively joined the Green Point program where members can purchase or redeem their green points for green products at Family Mart, 7-11, E-Life Mall, RT-Mart, A. mart, Hi-Life, ET Mall, EP-Life and other participating stores, and in addition to existing product point rewards, an extra 1,000 green points per item are awarded from now until the end of February.

Furthermore, introducing a friend to join the Green Point program will result in receiving 2,000 points each for both persons! The program continuously launches advantageous events to provide members with a more interactive experience. The public is invited to love the Earth starting from collecting green points, and joining the program now allows the public to echo a green lifestyle while keeping their pockets full over Lunar New Year.

The app is currently the most trendy and best environmental protection app for the public to initiate "green living, green shopping" habits. Everyone is welcome to download the Green Point App, sign up, and love the Earth while collecting points to enjoy rewards! Please visit the Green Point website (<https://www.greenpoint.org.tw/>) for more information.

7. Three Green Eating Tips for Lunar New Year

The Year of the Tiger has arrived, and together with the EPA, we will celebrate the beginning of a good year in wealth and prosperity! Appreciating food and blessings in line with green eating habits can help us preserve the beauty of the environment and accumulate fortunes when shopping, cooking, and eating out every day.

Food is a precious resource of the Earth. According to a United Nations report, 1/3 of food is wasted in the process of production, harvest, transportation, and consumption before being consumed. According to the EPA's statistics, Taiwan recycles approximately 40,000 metric tons of food waste per month. A large amount of discarded food generates food waste, greenhouse gas emissions, and other problems that encumber the Earth's environment and is also a waste of resources.

The EPA shared three tips on cherishing food during Lunar New Year that would help people guard their wallets and not worry about where to place their food scraps from Lunar New Year feasts.

【Purchasing】 Planned shopping. Open the refrigerator to confirm the ingredients and ponder over the amount to be consumed by the family before heading out to shop. Purchase only the amount to be

consumed. Moreover, consider purchasing non-standard or “ugly” fruits and vegetables and cherish every piece of healthy and nutritious food.

【Cooking】 Complete utilization of foods. Make use of every part of food, including remnants that might be turned into delicious dishes, and do not worry about discarding food scraps.

【Eating Out】 Give priority to stores that advocate food conservation when making reservations or buying gifts, support food conservation with action by ordering suitable food content and quantity, and bring containers to take away leftovers.

There are now food and beverage store owners across Taiwan who echo the food conservation initiative. The EPA invites you to join the food conservation campaign by cherishing food, reducing food waste, and celebrating Lunar New Year with Mother Earth.

8. Prosecutors Office, Police, and Investigation Bureau Cooperate in Apprehending Group for Dumping Hazardous Industrial Waste

On the night of 17 September 2020, the Environmental Protection Bureau of Kaohsiung City received continuous complaints from the public regarding abnormal chemical odor in Niasong District of Kaohsiung City. Upon inspection by Ciaotou District Prosecutors Office, it was discovered that a factory was being rented for disposing of waste materials. A task force was formed to direct the Seventh Special Police Corps and the Ministry of Justice Investigation Bureau’s Kaohsiung City Office to gather evidence and expand investigation in conjunction with the EPA and the Environmental Protection Bureau of Kaohsiung City. The collection, comparison, and search for evidence continued for over a year. On 11 January 2022, the criminal group was apprehended for improperly disposing of hazardous industrial wastes in a rented factory. Four people were detained and held incommunicado. A preliminary estimate of illegal profits stood at several million NT dollars.

The EPA said that at first, footage from surveillance cameras in the vicinity of the factory was examined and filtered vehicle by vehicle. After isolating the vehicle involved in the case and through comparing it with the evidence left at the scene, the identity of a suspect was determined. Further surveillance and collection of evidence revealed that a criminal group headed by a suspect surnamed Liu rented a vacant factory in Niasong District. It claimed that the facility was used to store solar energy equipment but it was illegally used to dispose of large quantities of industrial waste materials. The Environmental Protection Bureau of Kaohsiung City conducted tests on the waste materials and ascertained that they were waste solvents with flashpoints of less than 40 °C and greater than 200mg/L of butanone, which is classified as hazardous industrial waste.

To prevent the spread of pollution, in addition to the emergency removal and placing in proper storage of the wastes found at the site, subsequent investigation revealed the identities of the perpetrators, drivers and transport companies involved in illegal waste material clearance and disposal, all of whom were brought to justice for violating the *Waste Disposal Act*.

Furthermore, in the course of expanding the investigation, the prosecutor also found that the group had conducted soil preparations in a fish-pond land in Hunei District of Kaohsiung City under pretenses of setting up ground-based solar photovoltaic power generation facilities when in fact they buried waste materials under the soil. After on-site excavation, the site was backfilled with a significant amount of industrial waste, such as mixtures of construction waste. The landlord provided the land to be backfilled with waste materials without permission.

The EPA said that in order to put an end to illegal clearance and disposal of industrial wastes, the EPA has been cooperating with the prosecutors' offices, the police, and the Investigation Bureau for many years to combat environmental crimes jointly. The results have been fruitful, and all waste source enterprises are

urged to refrain from entrusting unscrupulous companies for clearance of industrial wastes, or they will face criminal liability for conspiracy. They will need to jointly undertake the obligation to restore and clean up the disposal sites. The maximum penalty is imprisonment of up to 5 years with a possible fine of \$15 million.



After on-site excavation, the site was backfilled with a significant amount of industrial waste.

9. Outstanding Adopters of Air Quality Purification Zones Recognized to Encourage Air Quality Protection

To encourage private enterprises and communities to participate in adopting air quality purification zones, the EPA held a competition to recognize outstanding adoptions. As of the end of 2021, there were 549 air quality purification zones. The competition was participated in by 68 adoptive enterprises and communities recommended by 19 county and city environmental bureaus. After on-site evaluation and final selection, 61 entities with outstanding achievements were selected. On 17 January 2022, the Award Ceremony for Excellent Adoptive Entities for Air Quality Purification Zones for the Year 2021 was held in Taipei, where medals were presented by the deputy minister of the EPA, Chih-Hsiu Shen.

The EPA thanked the adoptive entities that won the awards for the year 2021. A total of 61 awards were presented this year, including 35 special contribution awards, eight especially outstanding awards, six outstanding awards, eight excellent work awards, and four sustainable care awards. In addition, for local environmental bureaus with outstanding performance, Taoyuan City and Tainan City were awarded the outstanding promotion awards, while Changhua County and Chiayi City received ecological pilot awards. These awards were to thank the county and city environmental bureaus for promoting the adoption of air quality purification zones and green beautification work and disseminating greening and environmental protection concepts.

The unique contribution award is the highest award at present. In addition to being deeply recognized for several years of hard work, the winning entities should also have made selfless efforts and actively guarded the environment to win this award. Many enterprises that won the 2021 special contribution award had also won awards for several consecutive years. The winning enterprises included: Taipower (Jianshan and Tongxiao Power Plants), Compal Electronics, ChipMOS Technologies, Sun Moon Lake Wen Wu Temple, CPC Corporation Refining Department-Dalin Refinery, Pingtung County Ligang Township Longweixiang Charity Association, Chung Hwa Pulp Corporation Hualien Plant, Walsin Lihwa Corporation Taichung Branch, Yeong

Chin Machinery Industries, Hon Chuan Company, YFY Packaging Inc. Taoyung Plant.

Among the communities that won the special contribution awards was Ming Chuan Community Development Association in Yilan City and Yilan County, for making a unique scenic route in Yilan. Sifang Community Development Association in Yongjing Township, Changhua County built their adopted air quality purification zone into a natural ecological classroom and successfully restored fireflies and attracted rhinoceros beetles to inhabit it. In addition to purifying the air, the work also helped develop the local ecological tourism industry by enhancing local characteristics.



Ming Chuan Community Development Association in Yilan City



Sifang Community Development Association in Yongjing Township, Changhua County

10. River Pollution Response Workshop Organized to Enhance Ability for Guarding River Environments

To enhance the ability of environmental agencies to respond to river pollution emergencies, from 18-19 Jan 2022 the EPA held the “River Pollution Emergency Response Study and Training Workshop” in which relevant central and local agencies participated. In the workshop, participants from industry, government, academia and environmental competent authorities shared and discussed regulations and practical emergency responses to strengthen professional knowledge required for response operations.

The study and training workshop contained courses such as explanation of relevant water pollution prevention and control regulations, water pollution and ecology, practical response experiences of government agencies and private enterprises, sources and characteristics of river pollution, application of

on-site decontamination equipment training, response principles and strategies, group case exercises and studies. In addition to domestic speakers, international response experts from the Centre of Documentation Research and Experimentation on Accidental Water Pollution (Cedre) of France, were also invited to give lectures through video conferencing. The EPA has sent personnel many times to Cedre in France to participate in professional training regarding pollution response and signed a Memorandum of Understanding (MOU) with Cedre in 2016. To date, both agencies continue to deepen cooperation on river pollution response issues.

Rivers are important natural resources in Taiwan. In addition to strengthening legal controls and promoting various water pollution prevention and control measures, environmental agencies have diligently prepared and trained to respond to significant pollution incidents.



The trainees and international response experts from Cedre through video conferencing

**Major Environmental Policies
R. O. C. (Taiwan)**

Publisher

Tzi-Chin Chang, Minister

Editor-in-Chief

Shyh-Wei Chen

Executive Editors

Shiuan-Wu Chang; Tsu-Shou Cheng; Miao-Ling Chen;
Shao-Wen Chang; Ken Lee; Jason Hoy

For inquiries or subscriptions, please contact:

Major Environmental Policies

Office of Sustainable Development
Environmental Protection Administration
83, Sec. 1, Jhonghua Rd., Taipei 100, R.O.C. (Taiwan)
tel: 886-2-2311-7722 ext. 2216
fax: 886-2-2311-5486

Contents Copyright 2022