

# Major Environmental Policies

May 2023

## 1. Feature Article: European and Asian Experts Discuss Future of Resource Circulation in International Conference

On 29 May 2023, the EPA and the EU once again jointly organized the 2023 Resource Circulation International Conference at the Taipei International Convention Center, alongside the many events of the EU Innovation Week. With the objective to deepen the long-term cooperation between Taiwan and the EU, this is yet another collaboration between the EPA and the EU after the first one in 2018. Through the conference, both sides hoped to promote the alignment of Taiwan's resource circulation policies with international standards, match enterprises in the resource recycling industry that are in need of assistance, and learn about the latest international trends and technologies. The conference took place after the opening ceremony of the EU Innovation Week, which was attended by Premier Chien-Jen Chen, Deputy Director-General Maive Rute from the European Commission's Directorate-General for Internet Market Industry, Entrepreneurship and SMEs (GROW), Minister Mei-Hua Wang from the Ministry of Economic Affairs (MOEA), and the EPA Minister Tzi-Chin Chang.

### Maive Rute: Ensuring the circular economy for global sustainable economic development is crucial

During the opening ceremony, Deputy Director-General Maive Rute emphasized that, after not being held for several years, this year's EU Innovation Week saw the participation of numerous European businesses, industry organizations, and research institutions, all ready to collaborate with the world. As there would be many discussions and network sessions, she hoped to "encounter the right partners" and explore innovative opportunities together, and further emphasized that "industry dialogues" via face-to-face communication would be the most important form of exchange, enabling substantive cooperation. Moreover, Maive Rute highlighted the importance of seeking new ways to ensure global sustainable economic development through circular economy practices and expressed the EU's eagerness to engage in discussions on relevant topics.



## **Deputy Director-General Maive Rute shares policies on "Connecting Regulations and Commercial Applications for Sustainable Circularity in Europe"**

Premier Chien-Jen Chen pointed out that the total trade volume between Taiwan and the EU in 2022 reached a historic high. The EU is Taiwan's fourth-largest trading partner and the largest source of investment, with cooperating industries spanning across sectors such as semiconductors, automobiles, information and communication technology, and machinery. The premier especially thanked European companies for their investments in Taiwan's offshore wind power and other industries. As Taiwan continues to carry out its Forward-Looking Infrastructure Development Program, the premier hoped that both Taiwan and the EU could establish a more robust supply chain under the common goal of facilitating net-zero emissions and digital transformation through its six core industries of the Program.

### **Minister Chang: Regulations and technologies can solve low competitiveness in the recycled material market**

Minister Tzi-Chin Chang stated that Taiwan's waste recycling system has been in place since 1987, and its recycling rate ranks among the highest in the world. However, it is necessary to address the challenges of innovation hindered by subsidy standards. The EPA has already started encouraging high-value reuse through fee adjustments. In the future, there will be laws specifically governing resource recycling that will change people's views on waste, mandating producers to maximize utilization of resources before resorting to waste disposal. This will require significant innovation and mutual learning with the EU on regulations and technologies to address the issue of insufficient competitiveness in the market of recycled materials. The ultimate goal is to enable substantial resource circulation.



**Minister Chang delivers a speech in the opening ceremony**

The conference featured a keynote speech by Deputy Director-General Maive Rute on "Connecting Regulations and Commercial Applications for Sustainable Circularity in Europe." Invitees such as government representatives from Germany, Italy, Singapore, experts from a British national think tank and the Asian Development Bank, and representatives from outstanding industries in Taiwan also shared strategies and technologies related to resource circulation in hopes of creating a new future for resource circulation via observation and exchanges.

## **Resource Recycling Administration to promote zero waste and formulate resource circulation-specific laws**

In 2022, Taiwan announced its 2050 net-zero transition, covering 12 key strategies. Strategy 8 “Waste Recycling and Zero Waste,” for which the EPA was assigned the responsibility, encompasses plans such as green design for waste reduction, reuse of resource and energy, efficient circulation networks, and innovative technologies and systems. Therefore, measures and actionable practices are to be formulated to minimize the use of primary raw materials and transform waste into materials, fuels, and fertilizers. To promote resource circulation and utilization, the EPA has also initiated legislative efforts to formulate laws specifically for resource circulation by combining the *Waste Disposal Act* (廢棄物清理法) and the *Resource Recycling Act* (資源回收再利用法). Instead of focusing on waste management like in the past, the new law will emphasize material lifecycle management and create an environment favoring resource circulation through expanding resource utilization, source management, and producer responsibility.

In recent years, the EU and various countries and regions have introduced action plans and initiatives relevant to resource circulation. The EPA will be upgraded to become the Ministry of Environment and, at the same time, establish the Resource Recycling Administration. This organizational restructuring will facilitate the achievement of the goals of resource circulation and carbon reduction via integrating the strategy of Resource Recycling and Zero Waste, the legislation of laws governing resource circulation, and other policy efforts. Through this international conference, Taiwan aimed to share its remarkable achievements in promoting resource circulation and join hands with other nations in advancing toward resource sustainability.

The international symposium this year centered around topics such as “Resource Circulation Policies,” “Plastic Resource Circulation,” “Ecological Design and Business Models for Sustainable Products,” and “Waste-to-Energy Technologies.” Among the international speakers, Singapore shared its experiences in creating a resource-efficient sustainable nation, Italy discussed chemical recycling of plastics, and the UK presented business models delinked from consumption of raw materials. Germany shared insights on digital passports for products, and the Asian Development Bank elaborated on waste-to-energy technologies. As for the Taiwan side, Chairman Yu-Cheng Huang of Circulate Taiwan Foundation began with an introduction of resource circulation policies, followed by Far Eastern New Century Corporation, which shared insights on sustainable materials and circular economy, and SmallRig presented the vision of a zero-waste future. Later, Taiwan Design Research Institute discussed design of our green future, Dell Technologies shared its environmental, social, and governance (ESG) strategy, Taisun Green Energy talked about transition to low-carbon through bioenergy, and finally, the Biomass Energy Technology Association of Taiwan presented Taiwan's waste-to-energy technologies and achievements.

Through the inspiring speeches and discussions by local and foreign speakers, the conference provided participants whether from industries, the government, academia or research communities with insights into innovative thinking and specific practices in resource circulation from various countries. It also fostered consensus between Taiwan and the international community on promoting resource circulation, further enhancing cooperation in this field. The EPA stated that, as achieving net-zero emissions and promoting resource circulation are international trends, it hoped that businesses and the public would actively participate and collaborate in innovative ways to establish a fully circular future that maximizes resource utilization and minimizes waste.



Experts participating in the discussion: Ying-Ying Lai, Director General of Office of Resource Circulation (middle), Jia-Ling Wu, Manager of ESG Office of YFY Packaging Inc. (first from right), Professor Yang Gu, Department of Chemical Engineering, National Taiwan University of Science and Technology (second from right), Senior Energy Expert Mr. Peters, Asian Development Bank (second from left), and Jia-Ji Chang, Researcher of Taiwan Bio-energy Technology Development Association (first from left)

## 2. World Environment Day Event Pushes for Reduction of Plastics and Food Waste

The theme of the 2023 World Environment Day is "Beat Plastic Pollution." The EPA collaborated with local environmental agencies to address the issues of "green diet" and "plastic reduction." The event, "2023 World Environment Day: Beat Plastic Pollution for Sustainable Dining," was held on the afternoon of 3 June at the Ministry of Culture's Cultural Heritage Park in Taichung City. The aim was to educate the public on how to reduce plastic waste and practice food conservation in daily diets, ultimately achieving the goal of zero waste by 2050 through zero-waste actions and a green lifestyle.

In addition to exacerbating the crisis of water scarcity, global climate change impacts the ecosystems of flora and fauna, which in turn affect the sources of human food and dietary structure. The event titled "Beat Plastic Pollution with Sustainable Dining" centered on plastic reduction and green diet and was suitable for participation by individuals of all ages. It began with an entertaining performance by a percussion band to kick off the activities. It was followed by a stage play, performed by a children's theater group, which aimed to raise awareness among both adults and children about the daily habits that contribute to the production of disposable tableware, kitchen wastes, and other forms of wastes due to convenience or lack of consideration. Lastly, the audience was informed about practical steps they could take to minimize the use of disposable plastic products, thereby alleviating the burden on the environment, and encouraged to embrace plastic-free dining and practice not throwing food away.

A street bazaar on plastic reduction and off-grade produce opened in the afternoon of the event day, with the EPA promoting food conservation and showcasing the achievements of sustainable food initiatives in schools nationwide. Moreover, 16 local environmental agencies together promoted reduction of plastics and uneaten food through games, food made with off-grade produce, and local experts who shared tips on cooking off-grade produce. To encourage people to visit the booths in the bazaar, the EPA even designed a stamp collection activity, in which

collecting four stamps entitled participants to one chance to bring home seasonal produce they could grab using their own reusable bags.

At 6:00 p.m. the event screened the documentary “Theater of Life,” which depicts the life of renowned culinary social activist Massimo Bottura, also known as the “poet chef,” and his establishment Refettorio Ambrosiano. The film shows how he led a dining revolution of leaving no food waste and transforming leftovers into delicious meals, presenting one of the most innovative culinary concepts. Last but not least, local environmental agencies from the nation’s 22 counties and cities organized World Environment Day-related activities starting from June 5th. The public is encouraged to venture outdoors and experience the beauty of the environment, fostering a connection with nature.

### 3. Emission Standards Revised for Semiconductor Industry

**The revised *Air Pollution Control and Emission Standards for the Semiconductor Industry* (半導體製造業空氣污染管制及排放標準) were released by the EPA on 4 May 2023. Striving for practical, independent, and precise management, the amendments included addition of new process emission standards, changing control of a factory’s total emissions to control of concentrations of individual emission channels, strengthening independent monitoring, simplifying periodic inspections, and addressing current regulatory issues. The aim is to encourage newly built factories or new manufacturing processes to select facilities that have lower pollution emissions or are better at pollution controls, enhance the incentive for voluntary management by enterprises, and implement precise management of air pollution emissions.**

The EPA stated that as a crucial industry in Taiwan, the semiconductor industry is not only experiencing a robust development but also undergoing rapid changes. Therefore, the attention given to its associated environmental protection issues is of great importance. Previously, the standard had a fixed limit of 0.6 kilograms/hour for a factory’s total emissions of volatile organic compounds (VOCs), regardless of a factory’s scale. To reduce air pollutant emissions and make it more convenient for enterprises’ operations of voluntary management, the revised standards adopted a more practical and stricter approach, where emissions from individual emission channels are not to exceed 14 ppm for VOCs and 0.5 ppm for acid gases (nitric acid, hydrochloric acid, phosphoric acid, hydrofluoric acid, and sulfuric acid). Meanwhile, new emission standards have been introduced for new manufacturing processes, mandating that concentrations should not exceed 10 ppm for VOCs and 0.3 ppm for acid gases. This will help push new factories or manufacturing processes to choose facilities that are environmentally friendly or more effective at pollution control. The revised emission standards are expected to lead to a reduction of emissions of VOCs and acid gases by approximately 286 metric tons and 12 metric tons, respectively. The reduced emissions are equivalent to four months of emissions from an oil refinery.

In addition, revisions of the standard have simplified and integrated provisions relevant to inspections and testing under the *Air Pollution Control Act* (空氣污染防制法) so as to align with the announcement on 6 June 2022 regarding the stationary pollution sources in public and private venues that are required for regular testing and registration. Furthermore, emission sources with high emission concentrations and higher risks of pollution are now mandated to install relevant emission monitoring equipment in order to enhance voluntary management and effectively lower pollutant leakage and emission.

#### **4. Drainage Water Purification Park Resolves Odor Issues at Chiayi County Fishing Port**

**The EPA subsidized the Chiayi County Government to carry out the Budai Township- Yanguan Drainage Water Purification Project, which can treat up to 460 metric tons of wastewater per day. Located near the Budai Fishing Port, which is downstream of Jianlong Borough and the Yanguan Drainage System, the project was completed on 16 May, effectively resolving a long-standing issue of odor and poor water quality caused by wastewater from pickling vegetables.**

The Yanguan Drainage System in Chiayi County collects mainly household wastewater from Jianlong Borough in Budai Township, which is an area with a high concentration of dried daikon producers and the most significant pickled daikon production area in Taiwan. The pickling process generates a large amount of wastewater, and during the winter season when daikon is harvested, a significant amount of pickling wastewater flows through the Yanguan Drainage System, causing water quality deterioration and foul odors that have been troubling residents for many years. To improve the quality of the residential living environment, ameliorate the wastewater pollution and ensure the water quality of the downstream Budai Fishing Port, the EPA subsidized the Chiayi County Government to carry out the water purification project in 2020. The total budget exceeded NT\$88.09 million, with the EPA subsidizing over NT\$70.47 million and the Chiayi County Government bearing over NT\$17.61 million.

Considering the difficulty of treating high-salinity wastewater, this project adopts a diversion method to mix and dilute household wastewater. It utilizes a two-stage contact aeration oxidation process for treatment, with a daily processing capacity of 460 metric tons. After a 3-month trial operation, the average removal rates of biochemical oxygen demand (BOD), suspended solids, and ammonia nitrogen reached 96%, 89%, and 83% respectively. The results have been excellent, successfully resolving the long-standing issue of pickled daikon wastewater pollution. The foul odor has disappeared, the unique agricultural culture of Chiayi preserved, and the residential quality of life improved. The purified water is returned to the Yanguan Drainage System, enhancing the overall water environment of the downstream Budai Fishing Port. Additionally, solar photovoltaic panels were installed on the roofs of the treatment facilities and sludge drying beds, providing a portion of the electricity needed through green energy, increasing land utilization efficiency, and reducing carbon emissions.

In addition to achieving the goals of higher water quality and sustainable green energy generation, the treatment facility also successfully showcases a win-win situation for both industry and environmental protection, while revitalizing the waterfront scenery at Budai Fishing Port.

#### **5. Matching Platform Provides Options for More Cash to Replace Old Vehicles**

EPA Deputy Minister Shen Chih-Hsiu, Hsinchu Science Park Bureau (HSPB) Director Chen Li-Chu, and the Deputy Director-general of the Hsinchu County Government Environmental Protection Bureau (EPB) Hsiao Hung-chieh jointly signed the contract for the old vehicle replacement matching service on 25 May 2023. They announced that starting from 1 June, the "One-Stop Scrap Vehicle Recycling" website will provide new matching options. The public will be able to receive more cash when replacing old vehicles and contribute to carbon and air pollution reduction at the same time.

The EPA launched the "Old Vehicle Replacement 2.0" program in January this year, and there have been new developments since then, with the HSPB enhancing its acquisition of carbon reduction and air pollution reduction benefits. Starting from 1 June, citizens who scrap their old vehicles can see more favorable replacement plans on the "One-Stop Scrap Vehicle Recycling" website. The subsidy for replacing old gasoline-powered cars with electric ones, which was originally provided by the EPA at NT\$15,000 per vehicle, was increased to NT\$16,000 after the HSPB became involved. For cars registered in Hsinchu County, Hsinchu City and Miaoli County, the amount has been further increased to NT\$19,100. In addition, the Hsinchu County EPB will continue to acquire the carbon reduction benefits from replacing old motorcycles with electric ones, providing a subsidy of NT\$2,000 per vehicle, following the same scheme as last year.

Deputy Minister Shen Chih-Hsiu stated that accelerating the electrification of vehicles is an important strategy to achieve the "2050 Net-zero Transition." In Taiwan, the transportation sector accounts for 13% of greenhouse gas emissions. Through the expansion of matching the vehicle type with carbon emission and air pollution reduction benefits on this matching service platform, developers (enterprises) can fulfill the carbon reduction commitments stated in their environmental impact assessments. In addition to participating in environmental protection efforts to reduce air pollution and carbon emissions, individuals can also save money, creating a win-win situation.

On 25 May, the EPA signed matching service contracts with both the HSPB and the Hsinchu County EPB. The HSPB proposed a plan to acquire "greenhouse gas" offsets, with an estimated acquisition of offsets from the replacement of 26,400 gasoline-powered small passenger cars and trucks within two years, representing a carbon reduction benefit of approximately 420,000 metric tons. Additionally, in the Hsinchu-Miaoli air quality zone, the HSPB proposed a plan to acquire "air pollutant" offsets, with an estimated acquisition of offsets from the replacement of 19,578 gasoline-powered motorcycles, small passenger cars and trucks, buses and heavy trucks within three years. The reduction benefits for air pollutants are estimated to be 34 metric tons/year of volatile organic compounds and approximately 75 metric tons/year of nitrogen oxides.

The offsets that the HSPB planned to purchase this time were mainly to meet the needs of the Baoshan Phase 1 and Phase 2 developments. In the future, if there are new development plans in other park areas, it will continue to make purchases. The HSPB stated that the development of the park not only considers the needs of enterprises but also takes into account local features and environmental sustainability in its planning. This includes efforts in conserving and reusing resources such as water and electricity, as well as total amount control of greenhouse gas and air pollution emissions. Participating in offset mechanisms is not only about offsetting development activities but also providing economic incentives to the public. The Hsinchu County EPB pointed out that the Hsinchu County Government is actively participating in policy actions, allocating budgets and encouraging early participation of enterprises with needs, aiming for a win-win situation among the government, enterprises, and the public.

To accelerate the replacement of old vehicles, the EPA began subsidizing vehicle owners at the beginning of 2023 to replace vehicles that are over ten years old with electric or low-emission vehicles. Depending on the carbon reduction and air pollution reduction benefits and the type of new vehicle being purchased, different amounts of subsidies or incentives are provided. As of 20 May, a total of 796 old small passenger cars and trucks were replaced with new ones under the subsidy program. Additionally, since the launch of the matching platform on 10 June 2022, the HSPB and the Hsinchu County EPB have proposed the acquisition of carbon reduction benefits from the replacement of old motorcycles. As of 20 May 2023, the HSPB had 24,200 matches for motorcycle replacement, while as of the end of 2022, the Hsinchu County EPB had 279 matches.

Together, they have obtained a carbon reduction benefit of approximately 56,000 metric tons.

## **6. Forum on Voluntary Greenhouse Gas Reduction Hears Expert Suggestions**

**The EPA held the Expert Forum on Voluntary Greenhouse Gas Reduction Promotion Strategy on 18 May 2023. The forum was chaired by Deputy Minister Shen Chih-Hsiu and attended by four domestic experts and scholars specializing in voluntary greenhouse gas reduction. In-depth discussions were held on international mechanisms for voluntary emission reduction, the current promotion of voluntary reduction in Taiwan, and future revisions and directions. The EPA is currently formulating subsidiary laws of the *Climate Change Response Act* (氣候變遷因應法), and suggestions from participants will be considered for incorporation into the legal version.**

The *Climate Change Response Act* (hereinafter referred to as the Climate Act) has officially come into effect, incorporating the 2050 net-zero emission target into law, and strengthening Taiwan's management mechanisms for greenhouse gas reduction. The act sets out the levying and collection of carbon fees for dedicated funds. It also requires enterprises that establish new emission sources, or enterprises that make changes to existing sources that cause them to reach a certain scale, to engage in emission offsetting. It also encourages enterprises and all levels of government to independently or jointly propose voluntary reduction projects, apply for and obtain reduction credits, and transfer, trade, or auction the credits to interested parties.

The credits generated from voluntary reduction are known internationally as "carbon credits."

Recently, public concern has risen regarding the operational mechanisms of voluntary reduction, the review of reduction credits, and the trading of credits. The EPA organized this forum to promote understanding of the operational mechanisms and latest trends in domestic and international voluntary reduction systems, as well as to gather opinions from different sectors.

Liou Je-Liang, Director of the Energy and Environment Research Center at the Chung-Hua Institution for Economic Research, pointed out that the voluntary reduction mechanism serves as a complementary measure to carbon pricing mechanisms. The generation of credits should adhere to criteria such as additionality, permanence, leakage deduction, and avoidance of double counting.

The EPA presented a special report on the current promotion of voluntary reduction and offset projects and proposed revisions in Taiwan. The presentation emphasized that the review of credits will be based on five major principles used internationally for issuing reduction credits so as to ensure genuine emission reductions. There are also plans to simplify relevant procedures to enhance the efficiency of credit reviews. At this stage, enterprises are advised to prioritize the understanding of their own emissions and plan reduction measures. If necessary, they can utilize the voluntary reduction credit trading mechanism to assist in achieving their reduction goals.

Professor Liu Chung-En from the Department of Sociology at National Taiwan University proposed that the implementation of voluntary reduction and carbon offset measures in Taiwan should be supported by a robust carbon pricing mechanism as the market foundation. It is important to ensure genuine emission reductions and exercise strict scrutiny in the credit review process. This is necessary to avoid the issuance of invalid credits that could impede other net-zero policies and hinder the achievement of the net-zero target.

Professor Liou Ming-Lone, a visiting scholar at the London School of Economics and Political Science, mentioned that enterprises should prioritize internal emission reductions, and the utilization of reduction credits should be considered as a last resort. Moreover, the credits should



meet quality standards and undergo verification of additionality to ensure genuine carbon reduction benefits. He also cautioned that the use of early-stage greenhouse gas project credits issued prior to the implementation of the *Greenhouse Gas Reduction and Management Act* (溫室氣體減量及管理法) and overseas credits should be approached with caution to avoid delaying Taiwan's progress in achieving reduction targets.

Senior Researcher Chen Honda from the Taiwan Academy of Banking and Finance pointed out that international society is scrutinizing voluntary reduction mechanisms again. The European Union (EU) no longer accepts carbon credits issued under the United Nations Clean Development Mechanism, and it is expected that the EU's Carbon Border Adjustment Mechanism will also not recognize them. He also cautioned that carbon credit trading may become limited in the future and urged enterprises to prioritize internal emission reduction efforts.

Professor Yuh-Ming Lee, a distinguished professor at the Institute of Natural Resources Management at National Taipei University, provided an overview of carbon pricing and voluntary reduction mechanisms in Taiwan. He emphasized the need for cautious quantification of emissions and highlighted that the issuance of credits should primarily focus on additionality to ensure genuine emission reductions.

At the end of the forum, the moderator, Deputy Minister Shen Chih-Hsiu, also mentioned that voluntary greenhouse gas reduction, as designed in the Climate Act, serves as a complementary measure to carbon pricing to enhance cost-effectiveness. The EPA is currently developing relevant subsidiary laws, and the suggestions provided by the experts, scholars and attendees will be taken into account. In the future, the EPA will rigorously establish regulations based on international principles to review credits. Additionally, it is hoped that voluntary reduction mechanisms can incentivize domestic emission reduction efforts to ensure the acceleration of overall national reduction and achieve the net-zero target.

## **7. Governments Utilize Technology to Curb Illegal Dumping along Lanyu Coast**

**The central and local governments are taking joint actions to reduce waste dumping on coasts, starting with demonstration projects in small areas such as offshore islands. Recently, the EPA, the Coast Guard Administration, the Lanyu Township Office and the Environmental Protection Bureau and Police Bureau of Taitung County conducted an investigation into marine waste issues in Lanyu Township and jointly carried out coastal environmental inspections. These actions demonstrated the determination to utilize the latest technology to enhance environmental law enforcement capabilities, and to engage in collaborative investigations.**

Coastal environmental hygiene is closely tied to marine ecology, and indiscriminate dumping of waste along the coast can cause severe damage to marine habitats. If such dumping practices are not immediately deterred and regulated, they may lead to further cases of dumping. The central government is working together with local governments, starting with the Lanyu Township Office, to strengthen education and awareness among local residents and tourists regarding proper waste sorting and clearance. Beach cleaning activities are also being organized to enhance public environmental awareness.

To curb illegal dumping activities, the EPA, together with personnel from the Environmental Protection Bureau and Police Bureau of Taitung County and the Coast Guard Administration, have conducted joint coastal environmental inspections along the Dongqing coast of Lanyu Township. The inspection sites have been progressively cleared, with no perpetrators or new waste found. The EPA stated that it will encourage the use of technology, such as infrared cameras, and assist

the Taitung County Environmental Protection Bureau and the Lanyu Township Office in establishing monitoring facilities. By integrating AI (Artificial Intelligence) and cloud technology, remote-controlled cameras can be used to continuously monitor dumping hotspots and promptly track the perpetrators, thereby achieving the goal of environmental protection.

The EPA reiterated its call for compliance with Article 27 and Article 50 of the *Waste Disposal Act* (廢棄物清理法). Those who illegally dump waste may be subject to fines ranging from at least NT\$1,200 to a maximum of NT\$6,000. If the required improvements are not completed within the specified period, daily penalties may be imposed continuously. The EPA hopes that everyone will jointly enhance their responsibility for environmental protection.



**The Southern Branch of the EPA's Bureau of Inspection collaborates with the Environmental Protection Bureau and Police Bureau of Taitung County, the Coast Guard Administration, and the Lanyu Township Office to conduct coastal environmental inspections and law enforcement.**



**The EPA displays the technology that can be used to enhance enforcement capabilities in the field.**

## **8. Lithium Battery Cells Over 1 Kilogram to Be Regulated**

Under the Net-Zero Transition policy, the development of electric vehicles and energy storage systems is rapidly accelerating. In response to the use of secondary lithium batteries with single

cells weighing over 1 kilogram as an energy source, considering their nature is no different from the currently regulated and recycled secondary lithium batteries, the EPA preannounced an amendment to Table 1 of the Scopes for the Articles and the Packaging and Containers Thereof and the Enterprises Responsible for Recycling, Clearance and Disposal (物品或其包裝容器及其應負回收清除處理責任之業者範圍) to expand the scope of regulated secondary lithium batteries for the inclusion of these batteries in the resource recycling system.

The batteries used in electric vehicles are mostly secondary lithium batteries assembled from single cells weighing less than 1 kilogram, which fall under the scope of waste dry batteries that the EPA has announced should be recycled. The EPA has established a complete recycling and processing system with subsidy mechanisms for these batteries. After the recycling companies properly process waste batteries and pass audit and certification, they can receive subsidies.

Currently, there are six waste dry battery processing organizations that receive subsidies.

Regarding the issue of net-zero transition, various sectors are highly involved and committed to developing new energy sources. Some developing electric vehicles and energy storage systems rely on secondary lithium batteries with single cells weighing over 1 kilogram as an energy source. To plan for the inclusion of these batteries in the high-value circular systems promoted by the "Zero Waste through Resource Circulation" strategy, the EPA intends to announce secondary lithium batteries with single cells weighing over 1 kilogram as items that should be recycled. After the announcement of the amendment, manufacturers or importers of secondary lithium batteries with single cells weighing over 1 kilogram or those who install them in items such as electric vehicles should register as responsible enterprises, and report and pay the recycling, clearance and disposal fees. This will help to jointly operate and develop the domestic battery recycling industry chain, and contribute to a better environment and Taiwan's net-zero transition by 2050.

## 9. Repairability Index to be Piloted by Electronics Manufacturers

**After referring to France's "Repairability Index" system, the EPA provided guidance to mobile phone and laptop computer enterprises to pilot the implementation of a "Repairability Index." This initiative aims to enable consumers to identify the repairability of products when making purchases, allowing them to exercise their right to repair, thus reducing electronic waste.**

The current Repairability Index in France has a maximum score of 10, indicating the greatest ease of repair. It comprises five scoring criteria: availability of information; disassembly steps; tools and fastening features; availability of spare parts, and; prices and specific standards of spare parts.

Manufacturers must determine the index for their products before they are launched. Both physical and online stores are required to display the Repairability Index near the item price in a textual and graphical format easily visible to consumers to assist their purchasing decisions. The European Union has also introduced a draft of the Ecodesign for Sustainable Products Regulation (ESPR), which will also incorporate repairability scores that are to be disclosed in conjunction with the Digital Product Passport system.

The EPA explained that in the digital technology era, electronic products are constantly evolving, leading to an ever-increasing production volume, and the problem of difficulty in repair after damage often results in waste generation. Since sustainable consumption patterns are becoming an international trend, and in order to enable domestic manufacturers to adapt to the international market, the EPA has formulated the *Guidelines for Promoting the Repairability Index of Electronic Products* (電子產品維修度指數推動指引). These guidelines provide guidance on criteria score calculation and information disclosure methods. Manufacturers are invited to discuss and pilot the guidelines and propose localized scoring standards. The goal is to guide

manufacturers in designing and providing products and services that are more repair-friendly, thus extending the lifespan of products.

During the guidelines briefing held on 26 May, manufacturers were recommended to not only incorporate repairability into product design but also consider offering warranty repair services. Nearly 20 laptop and mobile phone brands such as ASUS and ACER, as well as the Taiwan Electrical and Electronic Manufacturers' Association, participated in the briefing. Currently, most manufacturers are happy to see the promotion of the repairability index and are cooperating with the policy. They are also considering the warranty service design. It is hoped that the establishment and promotion of a repairability index system will contribute to the advocacy of the Right to Repair, allowing consumers to reclaim their repair rights, promoting the development of the local repair industry, and maximizing the value of resources.

## **10. Green Chemistry Joint Awards Ceremony and Results Presentation**

**To attract all walks of life to move towards green chemistry and expand the benefits of promoting green chemistry, the EPA and the Ministry of Education (MOE) jointly held the Green Chemistry Joint Awards Ceremony and Results Presentation on 26 May 2023. The event incorporated activities focusing on the concept of sustainable development and ESG (Environment, Social, Governance) issues, aiming to encourage all sectors to move towards sustainable development and promote green chemistry in industry, government, academia, and research sectors.**

The Third Green Chemistry Application and Innovation Awards were presented to encourage enterprises while the Third College Green Chemistry Innovation Competition and the 2022 Senior High School Green Chemistry Innovation Competition were held to encourage college and high school students to follow the Twelve Principles of Green Chemistry. A total of 69 individuals and teams were recognized. The ceremony was addressed by Premier Chen Chien-jen, convener of the National Chemical Substance Management Board of the Executive Yuan, who expressed sincere appreciation and respect for the outstanding contributions of the green chemistry award recipients. In addition, one of the founders of the field of green chemistry, John C. Warner of the United States, was invited to congratulate the recipients via a video message and to encourage all fields to promote green chemistry at source while emphasizing the importance of disseminating the concept of environmental sustainability on campuses.

The Third Green Chemistry Application and Innovation Awards, organized by the EPA, received a total of 69 nominees. After a rigorous selection process, 14 outstanding organizations and 10 individuals were chosen as winners. In the group category, the awarded organizations came from industry, government, academia, and research sectors and have contributed to creating a sustainable environment through green chemistry by making significant contributions in promoting safe alternatives, promoting non-toxic processes, developing environment-friendly approaches to enhance economic benefits, and promoting toxic disaster prevention and response. In the individual category, the winners had not only devoted themselves to long-term research in green chemistry but also promoted the concept of sustainable environmental development. Some of the awardees have excelled in green chemistry education and have led their students to numerous awards, demonstrating their outstanding contributions to the field of green chemistry. These awarded organizations and individuals are all crucial driving forces behind Taiwan's green chemistry promotion, serving as role models for all sectors.

In addition, the EPA and the MOE jointly organized the Third College Green Chemistry Innovation Competition and the 2022 Senior High School Green Chemistry Innovation Competition. Both had

received strong support from many teachers and students. The former attracted 70 team entries and ultimately selected 20 winning teams, while the latter received 144 team entries and ultimately selected 20 winning teams along with five school awards. The awarded projects in both competitions showcased the boundless creativity of the students.

The EPA stated that protecting the environment and promoting sustainable development require interdisciplinary cooperation and collaboration. To deepen the exchange between different fields, besides hosting the award ceremony, the EPA also organized various activities in the afternoon, including the Enterprise Sustainable Governance (ESG) Event, the College Innovation Competition Results Presentation, and the High School Innovation Competition Results Presentation. These events involved discussions on topics related to corporate integrity, green chemistry, and ESG sustainable development. Through two-way communication and sharing of experiences, the EPA sought to foster consensus and establish trustworthy partnerships between the public and private sectors in implementing environmental protection efforts.

For more information on the awards, please visit the EPA's Green Chemistry Application and Innovation Awards website (<https://topic.epa.gov.tw/gcai/mp-9.html>), the College Green Chemistry Innovation Competition website (<https://topic.epa.gov.tw/gcic/mp-13.html>), and the MOE's 2022 Senior High School Green Chemistry Innovation Competition website (<https://chem.moe.edu.tw/green/AwardsDetail/f6f62fbc-9de4-4fcd-a177-24ca3cdabdfd>).

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