



## NEWS ROUNDUP

13 FEBRUARY 2023 [ 08:00 am]

---

- Marcos lauds Tokyo Gas Co's investment in PH, says green energy goals on track
- DENR partners with private sector, academe for reforestation carbon credit program
- Understanding the implications of the EPR Law (1)
- Understanding the implications of the EPR Law (2)
- Supporters of a controversial climate solution say it could be key. Critics believe it is the path to catastrophe
- Filipino curator of art and climate change on museums' role in solving climate crisis: 'We need to create shows about it'
- Wetlands are vital for agriculture
- Harnessing power of renewable energy
- Natural disasters, boosted by climate change, displaced millions of Americans in 2022
- Humanity: Biggest obstacle to climate change
- Big push for sustainable mining
- AboitizPower signs energy MOU during PBBM's Tokyo visit
- Effects of productive PBBM Japan trip to be felt 'rapidly'
- Cagayan students pledge wetlands protection
- Renewable energy firm ramps up target to 5,000 MW

### CCC IN THE NEWS:

- LGUs can avail of funds for climate adaptation projects

### ABS CBN

#### [Marcos lauds Tokyo Gas Co's investment in PH, says green energy goals on track](#)

MANILA - President Ferdinand Marcos Jr on Friday said the country was “going down the right path” in terms of clean energy as he lauded Japanese energy giant Tokyo Gas Co Ltd’s investment in the Philippines.

## **BUSINESS WORLD**

### **[DENR partners with private sector, academe for reforestation carbon credit program](#)**

By: Sheldeen Joy Talavera

THE DEPARTMENT of Environment and Natural Resources (DENR) is developing a carbon credit program through reforestation in partnership with private companies and a university, starting in Negros Occidental province.

### **[Understanding the implications of the EPR Law \(1\)](#)**

By: Benjamin N. Villacorte and Erica Nicole D. Gomez

With the signing of Republic Act No. 11898, also known as the Extended Producer Responsibility (EPR) Act of 2022, obliged enterprises are now engaged in establishing their own EPR programs to meet the deadline for EPR registration on Feb. 13.

### **[Understanding the implications of the EPR Law \(2\)](#)**

By: Benjamin N. Villacorte and Erica Nicole D. Gomez

The circular economy concept has been given more and more attention through the years and has now materialized in the Philippines through the Extended Producer Responsibility (EPR) Act of 2022 and its Implementing Rules and Regulations (IRR). In fact, the Philippines is one of the few countries around the globe with active regulations or national programs on the circular economy, counting itself among Scotland, Canada, South Africa, China, Japan, Singapore, and the European Union.

## **CNN**

### **[Supporters of a controversial climate solution say it could be key. Critics believe it is the path to catastrophe](#)**

When US startup Make Sunsets released two weather balloons into the skies above Mexico's Baja California peninsula last year, it kicked up a fierce debate about one of the world's most controversial climate solutions.

## **GMA NEWS ONLINE**

### **[Filipino curator of art and climate change on museums' role in solving climate crisis: 'We need to create shows about it'](#)**

By: Lou Albano

John Kenneth Paranada recently became the curator of art and climate of the first museum in the UK to appoint such a role, the Sainsbury Centre for the visual arts.

## **MANILA BULLETIN**

### **[Wetlands are vital for agriculture](#)**

By: Ralph Lauren Abainza

Wetlands are like biological supermarkets where vast amounts of food let many organisms thrive. The seasonal water inundation provides suitable habitat for many plant and animal species. These are also the areas that cultivated the world's agriculture.

## **MANILA STANDARD**

### **[Harnessing power of renewable energy](#)**

By: Patricia Taculao

Modern technology and development undeniably made life easier for civilizations. Yet the advantages of modernization have their setbacks, particularly on the environment.

## **NBC NEWS**

### **[Natural disasters, boosted by climate change, displaced millions of Americans in 2022](#)**

By: Lucas Thompson

Natural disasters forced an estimated 3.4 million people in the U.S. to leave their homes in 2022, according to Census Bureau data collected earlier this year, underscoring how climate-related weather events are already changing American communities.

## **PHILIPPINE DAILY INQUIRER**

### **[Humanity: Biggest obstacle to climate change](#)**

By: Andrew Sheng

Why is it so difficult to tackle climate change? Sixty years ago, the Club of Rome's report "Limits to Growth" already projected how human activity was going to change the planet, heating up the climate through carbon emissions that would raise the sea level, change the weather, and damage food, water, and natural resources.

### **[Big push for sustainable mining](#)**

Sidelined during the previous administration, the mining industry is getting a much-needed boost under the Marcos Jr. regime. The Philippine Development Plan (PDP) 2023-2028, according to Undersecretary Rosemarie Edillon of the National Economic and Development Authority, prioritizes the revitalization of the Philippine mining sector. Such focus on mining is understandable. The Mines and Geosciences Bureau has earlier identified about nine million hectares nationwide as potential mineral-rich areas, but less than 3 percent of these are covered by mining contracts.

## **PHILIPPINE NEWS AGENCY**

### **[AboitizPower signs energy MOU during PBBM's Tokyo visit](#)**

By: Kris Crismundo

MANILA – President Ferdinand R. Marcos Jr. has witnessed the signing of memorandum of understanding (MOU) on clean technology between Aboitiz Power Corp. and Japan's largest power generation firm, JERA Co., Inc., during his official visit in Japan.

### **[Effects of productive PBBM Japan trip to be felt 'rapidly'](#)**

By: Ruth Abbey Gita-Carlos

MANILA – President Ferdinand R. Marcos Jr. on Friday said the effects of the series of business meetings in Japan will be felt "very rapidly" after his five-day working visit in Tokyo.

## **THE MANILA TIMES**

### **[Cagayan students pledge wetlands protection](#)**

By: Leander C. Domingo

THE Department of Environment and Natural Resources (DENR) in Region 2 (Cagayan Valley) enlisted about 100 students through the Cagayan provincial environment and natural resources office for the protection and restoration of wetlands in the town of Bugey in Cagayan province.

### **[Renewable energy firm ramps up target to 5,000 MW](#)**

CITICORE Renewable Energy Corp. (CREC) is ramping up its solar energy targets for the next five years.

## **CCC IN THE NEWS:**

## **THE MANILA TIMES**

### **[LGUs can avail of funds for climate adaptation projects](#)**

By: Bella Cariaso

The Climate Change Commission (CCC) said that local government units (LGUs) can now submit project proposals to access the People's Survival Fund (PSF), a grant facility enabling them to implement local climate change adaptation initiatives.

**Information and Knowledge Management Division**

## **ABS CBN**

### **Marcos lauds Tokyo Gas Co's investment in PH, says green energy goals on track**

MANILA - President Ferdinand Marcos Jr on Friday said the country was “going down the right path” in terms of clean energy as he lauded Japanese energy giant Tokyo Gas Co Ltd’s investment in the Philippines.

"And so we are encouraged that in view of Tokyo Gas that it is worth the investment then we feel that we are going down the right path for our country's energy mix and we are grateful for that vote of confidence that you have shown by your investment in the future of the Philippine economy, the future especially of our energy supply from liquefied natural gas (LNG)," Marcos said as quoted by the Presidential Communications Office.

Marcos met with Tokyo Gas officials led by its president and CEO Takashi Uchida during his official visit to Japan. The Japanese company is a partner of local renewable energy giant First Gen Corp in a major LNG project in Batangas. First Gen Chairman and CEO Federico Lopez was among the business leaders who were part of Marcos’ business delegation to Japan.

Marcos noted that LNG has been an important part of the country's energy mix since 2017.

"And this was even before it was decided that LNG would create this large role in our energy mix because we are very much talking about the mix between renewables and traditional at the time. But now we are here now and certainly that is the most critical part of our plans for the future," the Filipino leader added.

In November last year, Marcos said renewable sources will supply half of the Philippines' energy needs by 2040, based on the Philippines’ National Renewable Energy Program (NREP), a roadmap to achieve the clean energy goals required under the Renewable Energy Act of 2008.

Marcos said reaping the benefits of renewable energy takes time because of the amount of work needed to set up the infrastructure for these projects.

"We are generally speaking [of] 6, 7 years so even if we begin tomorrow, we still have to work 6, 7 years and the question is what do we do in the meantime? We are examining the possibility... of course take more traditional wind and solar power, geothermal, all of

these. But it will take time to come into play because the infrastructure has to be put in place," the President said.

"That's why we are doing all we can to find ways to further-- to encourage extraction of LNG," he added.

## **BUSINESS WORLD**

### **DENR partners with private sector, academe for reforestation carbon credit program**

By: Sheldeen Joy Talavera

THE DEPARTMENT of Environment and Natural Resources (DENR) is developing a carbon credit program through reforestation in partnership with private companies and a university, starting in Negros Occidental province.

DENR signed on Friday a memorandum of understanding in Tokyo, Japan with Marubeni Corp., DMCI Holdings unit Dacon Corp., and the University of the Philippines – Los Baños College of Forestry and Natural Resources (UPLB-CFNR) for the project.

The signing ceremony was part of President Ferdinand R. Marcos' official visit to Japan.

"In this project, the government, private sector, and academic sector are working together to enhance the public good by contributing to environmental conservation and global warming countermeasures (as stated by the Philippines government), and to create economic value," said Marubeni in a statement.

Carbon credits are tradable certificates or permits allowing the holder to emit specified amounts of carbon dioxide or other greenhouse gasses in a specified period.

According to Marubeni, the Philippines' forest cover has declined to just over 20% of total land area in 2020 from 70% in the 20th century mainly due to "excessive logging" and "conversion to agricultural land."

"The project aims to restore biodiversity, create employment in local communities, and establish a carbon credit program through carbon absorption and sequestration by forests," the Japanese trading company said.

In December last year, DENR Secretary Maria Antonia Yulo-Loyzaga proposed to craft legislation for carbon credit systems in the Philippines and to review the Climate Change Act of 2009 or Republic Act 9729.

## Understanding the implications of the EPR Law (1)

By: Benjamin N. Villacorte and Erica Nicole D. Gomez

With the signing of Republic Act No. 11898, also known as the Extended Producer Responsibility (EPR) Act of 2022, obliged enterprises are now engaged in establishing their own EPR programs to meet the deadline for EPR registration on Feb. 13.

The Philippines is considered one of the top plastic polluters globally. A 2019 study by the Global Alliance for Incinerator Alternatives shared that Filipinos use a material amount of plastic packaging. Moreover, the National Solid Waste Management Status Report revealed that recyclables make up almost 30% of waste in the Philippines, comprising mostly of plastics and paper. Meanwhile, a WWF Philippines' study showed that only around 9% of post-industrial and post-consumer plastics are recycled. This is relatively low compared to other countries, but with the Act now being implemented, there is this greater anticipation that the country will see a significant increase in its overall recycling rate. Although the Act only covers plastic packaging in the early years of its implementation, the coverage will be gradually expanded to encompass other materials as well.

The Implementing Rules and Regulations (IRR) for the law were issued in January. The IRR provides detailed implementation requirements for the obliged enterprises, waste diverters and verification bodies, among others. Having established the need to implement an EPR program, obliged enterprises should explore what steps to take moving forward to comply.

In the first part of this article, we discuss six recovery programs, six reduction strategies and additional steps that obliged enterprises can do as part of their EPR programs.

### **EPR MECHANISMS: WHAT OBLIGED ENTERPRISES SHOULD PREPARE FOR**

As the country moves towards a more circular economy, obliged enterprises have been given the responsibility of managing their products throughout their lifecycles, starting with plastic packaging covered in the Act, with potential expansion of coverage in the future. By the February EPR registration deadline, obliged enterprises are required to submit their EPR programs with both recovery methods to effectively prevent the leakage of waste into the environment, and strategies to reduce non-environmentally preferable packaging products.

The law specifies the recovery targets that obliged enterprises need to meet, beginning with a 20% recovery rate by the end of 2023 until 80% by the end of 2028 and every

year thereafter. To do this, the IRR presents six recovery programs that obliged enterprises can do as part of their EPR programs:

1. Waste recovery schemes through redemption, buy-back and offsetting with the goal of achieving high retrievability, high recyclability and resource recovery of packaging waste;
2. Diversion of recovered waste with the intention of diverting packaging waste into value chains or other value-adding useful products;
3. Transportation of recovered waste to proper diversion or disposal sites, ensuring proper tracking for traceability and transparency;
4. Involvement in waste clean-up in coastal and public areas, with close coordination with local government and communities;
5. Investment in establishing commercial or industrial waste diversion or disposal facilities, backed by a business case or pre-feasibility study to justify the insufficiency of existing facilities in the country; and
6. Partnerships with local governments, communities and informal waste sectors for waste recovery-related purposes, ensuring the adequate and proper involvement of key stakeholders in the EPR program implementation.

On top of the recovery methods, the Act also requires obliged enterprises to adopt measures to reduce non-environmentally preferable packaging products. While the law does not specify reduction targets unlike for recovery, it still provides six reduction strategies:

1. Replacing single-use packaging with reusable ones aimed at improving the packaging's reusability, recyclability and retrievability;
2. Including recycled content or recycled materials in packaging, considering the amount of material effectively recycled and the efficiency of the recycling process including energy used;
3. Deploying refilling systems for retailers, basing on the amount of single-use containers avoided as a result of the availability of refilling system;

4. Establishing a viable reduction rates plan focused on upstream reduction of used material during the manufacturing of packaging;
5. Preparing an information and education campaign during the first year and updating annually; and
6. Ensuring appropriate labeling of packaging to facilitate recovery, reuse, recycling and proper disposal, following relevant standards and eco-label processes.

### **TAKING ONE STEP AT A TIME**

Since the EPR programs are relatively new to most businesses, obliged enterprises may opt to implement their own EPR programs or decide to work with others, i.e., other obliged enterprises or Producer Responsibility Organizations (PROs). A PRO refers to an organization that is either formed or authorized by obliged enterprises with the function of supporting them in the formulation, registration, implementation and audit of their EPR programs.

To advance the compliance of obliged enterprises with the provisions of the law, the IRR defines certain incentives. These include tax incentives, consideration of EPR expenses as necessary expenses deductible from gross income, and tax and duty exemptions of donations, legacies, and gifts. However, the law also penalizes non-compliance with fines ranging from P5 to P20 million, with an automatic suspension of a business permit for the third offense.

Registering EPR programs with the National Ecology Center (NEC), which works under the oversight function of the National Solid Waste Management Commission, by February is the first official deadline under the law. The NEC is responsible for maintaining an EPR Registry containing all registered EPR programs, and will provide technical expertise, information, training and networking services for the implementation of the law. Registration is imperative for obliged enterprises and failure to do so is the first possible offense.

With only a few days left before the deadline, obliged enterprises should also consider that the timely submission of their EPR programs would demonstrate their ability to really implement and operationalize these programs in the long-term. Considering that programs are expected to scale-up and be reported regularly moving forward, obliged enterprises must begin to, if they have not yet, incorporate their EPR programs and targets into their corporate strategies and annual plans.

## **MOVING TOWARDS CIRCULARITY**

A shift in mindset and action is necessary in accomplishing a more sustainable way of doing business. Companies should start thinking of long-term strategies for implementing their EPR programs in order to reach the target recovery rate of 80% by 2028 onwards. More than compliance and incentives from this Act, the implementation of these EPR programs will also reflect upon the values of the company, as well as its shareholders and stakeholders.

The transition to a more circular economy in the Philippines still has a long way to go, but the Act serves as a catalyst to encourage collaborative efforts from the government, companies, communities, and informal sectors to make conscious decisions in reducing the generation of plastic wastes in the country.

In the second part of this article, we discuss EPR registration, EPR implementation, and keeping confidence through third-party assurance.

## Understanding the implications of the EPR Law

By: Benjamin N. Villacorte and Erica Nicole D. Gomez

The circular economy concept has been given more and more attention through the years and has now materialized in the Philippines through the Extended Producer Responsibility (EPR) Act of 2022 and its Implementing Rules and Regulations (IRR). In fact, the Philippines is one of the few countries around the globe with active regulations or national programs on the circular economy, counting itself among Scotland, Canada, South Africa, China, Japan, Singapore, and the European Union.

Because of the huge potential of the Act to accelerate the transition of the Philippines to a more circular economy, all companies, not just obliged enterprises, can play a critical role in this ambition.

In the first part of this article, we discussed six recovery programs, six reduction strategies and additional steps that obliged enterprises can undertake as part of their EPR programs. In this second part, we discuss EPR registration, EPR implementation, and keeping confidence through third-party assurance.

### **FROM EPR REGISTRATION TO EPR IMPLEMENTATION**

The EPR registration with the National Ecology Center due on Feb. 13 is just the prelude to a long-term transformation process for plastic waste management. Mobilizing large enterprises in an action-oriented approach would lead to greater positive impact, which can also influence the micro, small and medium enterprises (MSMEs). MSMEs may voluntarily comply with the law by introducing small-scale EPR programs, but the real challenge lies in implementation.

Since both reduction and recovery methods are required to fully comply with the law, investment in technology, innovation, facilities and product development are needed. Partnerships with local governments and the informal waste sector are also highly encouraged to ensure the engagement of key stakeholders in EPR programs. Because the EPR requirements set forth in the law may be demanding for some, authorizing a Producer Responsibility Organization (PRO) can serve as a viable additional platform for EPR program implementation.

Obliged enterprises are required to have a system in place to account for their plastic footprint and engage an independent third-party auditor to certify the veracity of their reported plastic footprint, recovery and EPR program compliance using uniform standards established under the law. In this case, it would be advantageous to set up an

internal auditing system as early as now to avoid delays and setbacks in the future. This will also allow obliged enterprises to thoroughly review the strategies and schemes that best suit their company.

## **KEEPING CONFIDENCE THROUGH THIRD-PARTY ASSURANCE**

The initial waste footprint to be submitted in time for the EPR registration can be self-declared by the obliged enterprises. However, after the first-year implementation of their EPR programs, obliged enterprises would need to report their compliance and recovery targets achievement, assured by third-party audit.

While the submission of an EPR Law Compliance Audit Report (ECAR) is required for the government to monitor and evaluate the compliance of the obliged enterprises with their respective EPR programs, having third-party assurance provides transparency and confidence to businesses and their stakeholders that their efforts are contributing to a greater purpose.

The first ECAR submission is still in July 2024 covering the EPR programs implemented in 2023, and the following should be covered in the report:

- Footprint declaration for the volume of the obliged enterprise's plastic packaging brought into the market during the period covered;
- Recovery or plastic packaging waste diversion based on third-party audited diversion or credits;
- Determination of the equivalent plastic packaging waste footprint reduction resulting from other EPR programs;
- Confirmation of confidential information declared by the obliged enterprise.

## **ADVANCING CIRCULARITY IN BUSINESSES**

Embedding circular economy strategies in a company's overall strategy and shifting to a circular model from a linear model can benefit the entire company and positively impact its operations, growth, and legal compliance. A circular economy is a type of economic structure that aims to reduce waste and unending resource usage. It represents a fundamental change in how stakeholders manage the use of goods and resources at their core. The goal is to maintain resources and their value in the loop rather than the

present take-make-waste cycle, and to reimagine future business models suitable to creating a more sustainable society.

In advancing circularity, companies can reassess their product designs and material options, and target to reduce waste generation in their whole operations cycle. Businesses that utilize durable, renewable, and recyclable materials can lessen its reliance on scarce and expensive resources as well as reduce their susceptibility to supply chain disruptions. Companies can also employ more sustainable procurement.

Essentially, deciding to go with the more sustainable choice in applicable aspects of operations can make a huge impact and take the company a step closer to circularity. Additionally, shifting to a circular economy creates new jobs and revenue sources within the process of looping materials back into the system, including sorting, collecting, refurbishing, and remanufacturing, which is uncommon in the linear economy and opens businesses to new ways to drive growth.

## **BEYOND COMPLIANCE: TAKING STEPS TOWARDS A CIRCULAR ECONOMY**

Taking into consideration the target timeline in the EPR, companies should now be ready for their plans and strategies on the implementation of their EPR programs for 2023. The first submission of the ECAR will cover the 2023 EPR programs. Obligated enterprises or PROs are required to establish and implement accounting, data recording, and auditing systems for their respective EPR Programs.

The implementation of effective EPR programs goes beyond compliance — it also benefits companies through cost and tax reduction, energy savings, and favorable investor and consumer perception of their brands.

The EPR Act of 2022 is an opportunity for businesses to contribute to tackling the growing volume of plastic waste in the country, preventing the loss of valuable resources and reducing environmental degradation. Since the IRR has been published, businesses must now step up and act to monitor and evaluate their plastic waste generation. By beginning to build partnerships and strategies for EPR program implementation, they can take a significant step towards a circular economy.

## CNN

### [Supporters of a controversial climate solution say it could be key. Critics believe it is the path to catastrophe](#)

When US startup Make Sunsets released two weather balloons into the skies above Mexico's Baja California peninsula last year, it kicked up a fierce debate about one of the world's most controversial climate solutions.

The plan was for the balloons, filled with helium and a small amount of sulfur dioxide, to float high into the stratosphere. There they would burst, dispersing their load of sun-reflecting sulfur dioxide particles and cool the Earth, just a tiny bit.

Some dismissed it as a stunt. It is not clear if any particles were actually released or even if the balloons made it to the stratosphere. But Make Sunsets' experiment is significant for crossing a threshold when it comes to a hotly-debated climate solution: solar geoengineering.

To its supporters, solar geoengineering is a fix we cannot ignore as the world hurtles toward climate disaster. For critics, it is a technology so dangerous we shouldn't even research it.

#### **What is solar geoengineering?**

At its simplest, solar geoengineering, also known as solar radiation management, is an attempt to bring down the planet's temperature by reflecting sunlight away or allowing more heat to escape into space.

#### **There are three main techniques:**

Marine cloud brightening involves trying to make the low clouds over the ocean more reflective by spraying them with sea salt.

Cirrus cloud thinning targets wispy clouds higher up in the atmosphere, seeding them with aerosol particles in an attempt to thin them, so they trap less heat.

The most-researched method, however, is stratospheric aerosol injection. It involves spraying aerosols – such as sulfur dioxide particles – into the stratosphere, more than 12 miles above the Earth's surface, to reflect sunlight back into space. It could be done with balloons or specialized airplanes able to fly at high altitude.

The idea takes its cue from volcanoes. When Mount Pinatubo erupted in the Philippines in 1991, the sulfur dioxide it expelled high into the atmosphere had the effect of temporarily cooling the planet by 0.5 degrees Celsius (nearly 1 degree Fahrenheit).

### **Why is solar geoengineering such a hot topic?**

The idea has been around since the 1960s, but it's getting more attention because progress to tackle climate change is so far off-pace.

The world is on track to pass critical warming thresholds, beyond which the chances of extreme flooding, drought, wildfires and food shortages increase dramatically.

Scientists have even gone as far as to propose blowing moon dust toward the Earth to act as a sun shield, reducing the amount of sunlight reaching the planet.

"I wish there was no geoengineering!" Luke Iseman, the founder of Make Sunsets told CNN in an email. But "there are no other realistic options to stay below 2 [degrees Celsius]," he said.

While pretty much no one is claiming solar geoengineering could replace planet-warming pollution cuts and solve climate change, supporters argue it could have a big planetary cooling effect for a relatively small price tag. A 2018 Harvard study estimated it would cost around \$2.25 billion a year over a 15-year period.

The world needs to cut emissions, "no question," David Keith, professor of applied physics and public policy, at Harvard University told CNN. But it doesn't mean we can afford to ignore other climate solutions, he added.

"I'm not saying we have to do solar geoengineering, but I think it's worth considering all the tools," he said.

Chris Field, director of the Stanford Woods Institute for the Environment, told CNN there are good reasons to be skeptical of solar geoengineering. But, he said, if it "could provide a path for decreasing the impacts of climate change on millions of the world's most vulnerable people (and on ecosystems), we have a responsibility to explore the opportunities, as well as the risks."

For some of the most at-risk countries, including low-lying island nations, climate change already threatens their existence. A 2019 survey of more than 700 climate

experts found those who expected severe climate damage in their own countries were more supportive of solar geoengineering.

### **Why is it so controversial?**

In the eyes of its opponents, the technology could open the door to an almost infinite number of potential negative consequences.

“Just because we’re desperate doesn’t suddenly make solar geoengineering a good idea, because the risks are so immense,” Lili Fuhr, from the Center for International Environmental Law, told CNN.

There are fears fiddling with the planet’s thermostat could alter rainfall patterns and shift monsoons, with potentially devastating consequences for crops.

Effects could vary across regions, with some areas reaping benefits while others are harmed, increasing the chance of conflict.

“When things go wrong, it is usually the poor people that suffer the most,” said Chukwumerije Okereke, professor of global climate and environmental governance at Alex Ekwueme Federal University in Nigeria.

People are already suggesting African countries as a testing ground for the technologies, Okereke said. “It is a distraction from the sort of policies and help that should be coming to Africa.”

Solar geoengineering could also damage the ozone layer, which shields Earth from harmful ultraviolet rays, and is currently on track to repair itself after the success of a ban on ozone-depleting chemicals.

Then there are the difficulties of implementation.

As the aerosol particles do not tend to remain in the atmosphere for more than about a year, solar geoengineering would have to be continuously maintained. If halted, there is a risk of “termination shock,” unleashing all the pent-up warming “waiting in the wings, ready to slap the Earth in the face,” Raymond Pierrehumbert, professor of physics at Oxford University, told CNN.

It would also require unprecedented international cooperation, Frank Biermann, professor of global sustainability governance at Utrecht University in the Netherlands,

told CNN. “It would mean that countries have to collaborate forever,” he said, including those currently at war.

One of the biggest criticisms of solar geoengineering is it could be grasped by polluters as a way to continue polluting, and by governments as a distraction from policies to reduce planet-heating pollution.

In 2021, a group of nearly 400 scientists called for an “international non-use agreement,” a commitment to restrict the development of solar geoengineering “before it is too late.”

Governments should consider solar geoengineering in the same way they do chemical weapons, biological weapons, nuclear testing and Arctic mining, Biermann said.

### **What’s the progress so far?**

There has been a flurry of interest in the technology, especially in the US.

In 2019, Congress allocated \$4 million to the National Oceanic and Atmospheric Administration for stratospheric research, some of which was for solar geoengineering. And last year, the Biden administration announced a five-year research plan to explore the concept.

A 2021 report from the National Academy of Sciences called for the US to allocate up to \$200 million to a research program to better understand solar geoengineering, including its feasibility, impacts on society and the environment, and public perceptions.

Research organizations are also providing funding. In February, the UK-based Degrees Initiative announced \$900,000 for research in countries across Africa, Asia and South America to look at how the technology could affect the Global South.

So far, outdoor experiments have been difficult to get off the ground and have faced heavy resistance.

An attempt by Harvard University researchers to test a high-altitude balloon in Arctic Sweden in 2021 was abandoned after an outcry from local Indigenous Sami people. A letter on behalf of the Sami Council said solar geoengineering “entails risks of catastrophic consequences.”

And following Make Sunset's balloon release, the Mexican government announced in January it would ban solar geoengineering experiments.

As the world heats up and solar geoengineering shifts from sci-fi to mainstream, tussles between those who say there is an obligation to research it as a potential last-chance solution and those convinced it is the path to catastrophe are only likely to increase.

Critics like Biermann, however, remain unwavering in their opposition.

"It's very risky. It cannot be governed. It's unethical," he said. "And it is one of the biggest dangers in the current climate policies."

## GMA NEWS ONLINE

### [Filipino curator of art and climate change on museums' role in solving climate crisis: 'We need to create shows about it'](#)

By: Lou Albano

John Kenneth Paranada recently became the curator of art and climate of the first museum in the UK to appoint such a role, the Sainsbury Centre for the visual arts.

Raised by environmentalist parents who worked at the DENR, Paranada has always been attuned to climate and the environment, despite not necessarily understanding it. "[My parents] introduced me to climate change at a very young age — obviously, I couldn't understand it then," he told GMA News Online in a Zoom call last January.

Moving from Ilocos Sur to Manila at age 8 to study, Paranada soon witnessed "knee-high floods almost every time it rained. I have experienced countless floodings, drought, calamities and other severe weather conditions," he said.

He left the Philippines in 2013 to study the Philosophy of Nature in Paris with Bruno Latour, whom he calls "one of the trailblazing philosophers of the 21st century."

It was upon learning about the Gaia Theory — "all forms of life combined with the physical systems around them are vital to regulating the Earth's delicate chemistry and temperature," he shares — that Paranada's engagement with climate change became deeper.

And when he came home in November 2013 shortly after Typhoon Yolanda happened, he was completely submerged into it.

In this interview, Paranada explained the role of museums and art in solving the climate crisis, the necessary systemic change, and how the Philippines has influenced and inspired his vision for communicating the climate crisis through art.

It's been edited for length and clarity.

Congratulations on your appointment! Can you tell us what you'll do as a curator of art and climate change?

For me, my role is to be able to distill and translate theory and complex data relating to the climate crisis in contemporary art exhibitions into action and from that action into a new form of living.

I'm excited for this very complex role because it also involves translating science data into something that is digestible by the common public. It needs to be explained in the way that makes sense, is not jarring and is open.

I think my primary job is to articulate it in the way that is understandable, in a way that translates the power of art to captivate and enchant people to reimagine new ways of thinking.

Can you briefly walk us through your journey to this important appointment?

When I saw that the Sainsbury Centre was hiring for a Curator of Art and Climate Change last year, I knew it was a vital role (generously funded by the John Ellerman Foundation's Museums and Galleries Fund, which supports curatorial innovation in the UK).

Not only would this position be the first of its kind for the institution, it would be the first of any UK museum — a feat that is fitting for a genre-defying art museum with world-class collections such as the Sainsbury Centre. It's always broken the rules to empower art and people.

The emphasis on climate and sustainability enticed me, as I believe the climate crisis is one of our generation's most pressing, challenging and complex issues.

During my first interview with Tania Moore [Chief Curator], Calvin Winner [Head of Collections] and Dr. Jago Cooper [Museum Director], we discussed the role of museums in the 21st century. I told them that institutions need to be dynamic and agile in the face of an ever-morphing world, and that it is possible to be custodians of traditions and heritage whilst also being agents of change.

We discussed the possibilities of a sustainable future and how we might use the power of art to raise and shape our ecological consciousness and influence palpable change in society. I was already thinking of meaningful and experimental ways to articulate and activate the urgency of the climate crisis through the power of art, when I found out I had got the job.

How do you mean "possibilities of a sustainable future"?

Creating pathways to a new world requires an untangling of structures that don't work [anymore].

I'm interested in highlighting contemporary art and art from the antiquities that talk about these tangled relationships between humanity and nature. Like why do humans think they can control nature?

All of these are hinged upon the idea of development, of enlightenment that led to colonialization, which is horrible, which was soon followed by capitalism and the massive extraction of resources that soon became the norm.

It's a controversial topic because if you go into that root of who caused climate change, obviously it's mostly the rich and powerful nations that comprise the Global North and the industrialization that happened there.

But countries in the Global South for example are asking, "Why are we curbing our carbon emission now?" They are arguing it is part and parcel of their development as a country.

I think that conversation is a bit reductive because we need to acknowledge we have already altered the system of the planet, the climate.

Now is not the time to play the blame game, but to come together as nations and as a people to start addressing what we can do to prevent another kind of catastrophic event from happening.

And it starts with small things. For example, walk more, take the bus, take public transport.

But in places like the Philippines, people prefer cars because to take the train for instance, we need to wake up before dawn and endure long lines, and to take the bus, to sit through heavy traffic as well.

It needs to be systemic change because some systems are already untenable. Just really why is it [still] here? It creates so much pollution, so why care for those systems?

Systemic change also specifically points to the complex idea of re-assessing how we curate and design our modern cities to be more liveable and habitable. This pertains to scalable and workable solutions.

So perhaps in the Philippines, the immediate need to invest more in green, efficient and reliable public transport is vital as these infrastructure projects will ease the traffic, clean the air of cities and encourage the public to take mass public transportation [thereby curbing emissions].

These could be further programmed by introducing cycle lanes and covered walking paths in major thoroughfares.

If we want something radical, then the government should start introducing ways to encourage people to go car-free or create a program to carpool, introduce collective living habitats, install solar PV panels, switch electricity to renewable sources, introduce vegan or vegetarian diets at the workplace and encourage it at home, recycle.

These are apparent steps to decarbonize, but they need to be communicated well. That enacting all these things actually leads to a good life where we have access to healthy food. We encourage togetherness. Connect more with nature/physical activity/mobility. Personal growth and learning, ethical/spiritual framework and promoting sustainable consumption.

Again, these ideas are easier said than done, as policymaking is the key for all these ideas to be implemented. Government plays a crucial part, so the public must be critical and hold the government accountable for what the future might look like for the Philippine islands in the face of an ever-transforming world.

We need to redefine and assess how the lifestyles of human beings in the 21st century need to be recalibrated in ways that will work with the planet.

Hopefully it will happen soon. We not yet there so what can we do now is to have that conversation and lead the people to realize it is a crisis.

These are such big ideas. How do you intend to show this in your work?

My idea is basically to look at historical objects from — I guess let's just say "antiquities" to mean a particular era that is now gone but still very relevant in the 21st century, reminding us of who we are as human beings.

In elucidating the climate crisis into the exhibit format, I would go to showcase different types of objects. For example, the very first chain saw, which was invented in the Victorian times in Scotland.

The first chain saw is related to the climate crisis because it was first and foremost a medical device. It was when human beings first thought they could cut bones.

But then the chain saw is no longer used for surgeries of the human body. People started using it to cut trees. Soon after, we were plowing lands and soon enough massive ecological catastrophes started occurring in different places in the planet. I think it's all related.

We need to understand it from a historical vantage point but I'm not looking at it in a linear perspective.

It needs to be cyclical so that the audience becomes a part of the conversation. If we start dictating with a timeline, it won't work. It needs to be generous with the audience that they come in and understand and digest the ideas because it's so abstract and philosophical.

And the moment they understand how this relates to their experience as a human being, then that's when the magic of art happens. It makes an individual reflect deeply on how he's causing all of these upheavals.

This is going to be the strategy because in the climate crisis, we need to find that thing that rallies people together.

People need to start dialoging or having a conversation about this. Museums need to start creating shows about this.

In the recent COP 27 in Egypt, they created a consensus that museums need to play a role in shaping society's ecological consciousness. They said museums and heritage sites these are great places to have that conversation.

People enter these spaces for reflection and they need to reflect on this. it's one of the most pressing issues out there.

That's super interesting. Isn't there a growing consensus that the super wealthy with their private jets and weekend homes have high carbon emissions that the rest of us? The super wealthy are among those totally into art. Museums can reach them.

That's it. We need to influence them more because they fly everyday of your waking life, imagine the carbon emission they contribute to the world.

I'll explain myself by saying yes, museums have elitist sensibilities because that is its history but 21st century museums are more social. It talks more about the pressing issues in society. It's acknowledging colonialism and the repatriation of objects looted during colonialism.

You're doing this in the UK, which has a colonial past. Will you be touching on this in your 1st exhibit, "Sediment Spirit"?

The museum is a university museum so I think the audiences are more critical. I'm not really worried about talking about these violent and hard histories. It's not about that. Obviously we will be referring to that history but we will discuss it in ways that is polite — probably not polite because sometimes you need to be honest.

But it will be handled in such a way that it provokes dialogue rather than a confrontation.

Can you tell us more about "Sediment Spirit"?

"Sediment Spirit" is the first exhibition I'm curating. It traces art practices across generations, encouraging audiences to reflect on our impact as a specie on the planet over time.

It will look at art, space and architecture as performative entities to invoke what philosopher Claire Petitmengin posits as Felt Meaning, or "a feeling which does not belong to a specific sensorial register but which is nevertheless specific and intense, full of carnal and living density. It emerges at a deep, pre-reflective level and is inexorably embodied."

Instead of just one of our senses at work, felt meanings are often multi-sensorial, bringing together viscosity, texture, colours, vibrations, density, resonance and rhythm as part of the art. Such an experience will empower audiences to engage with the climate crisis on a visceral level.

"Sediment Spirit" will open with three different shows this autumn. We will have a show on plastics, we will have a show on indigenous art, and then the titular show.

We have a permanent collection in the museum and I'm using some of the objects from the collection to talk about the climate crisis. The permanent collection will have a lot of interventions from "Sediment Spirit."

We'll also invite contemporary voices to be part of it. It's going to have very diverse works — we'll have works from the '60s up to contemporary times, 2022.

After the opening there will be loads of programs to activate all the works together: artist talks, a performance, a discussion, a workshop. There's going to be loads of activities to last six months.

Did the Philippines play a role or influence your direction toward climate change?

My experience of growing up in the Philippines has consciously shaped how I make sense of the climate crisis. That's why I'm bringing a fresh take on this curatorial role. As a Filipino who has lived across Antipolo, Q.C., Pasig and Manila, I grew up witnessing knee-high floods almost every time it rained in the city.

I have experienced countless floodings, drought, calamities and other severe weather conditions. Combining my lived experience and my career in art, I've gained an understanding of how we might tackle issues relating to the climate crisis through different vantage points and entanglements of time, objects, ideas and space.

I've also noticed that our experience of the climate crisis differs from the Global North in some ways. Ours is more embodied, urgent and immediate because we are at the biting end of the insidious effects of the climate crisis.

As an archipelago in the East of the Pacific Ocean, the tropical experience of climate change conjures to me an image of shape-shifting islands, like our archipelagic south-adjacent neighbors Kiribati, Tuvalu and the Marshall Islands - which are in the low-lying archipelagos deep in the South Pacific and have faced countless coastal erosions and environmental destruction.

Cyclones and tsunamis in the region are predicted to become more intense. The Philippines and nation-states in the Pacific are already experiencing the catastrophic effects of climate change. We need to accelerate our response.

I feel that we, as Filipinos, have developed a form of resilience and adaptation through our cultural ways of modern-day Bayanihan as a coping mechanism in times of collective crisis. For example, the Filipino language already has a poetic and timely portmanteau on climate change. "Banyuhay" or pagbabagong anyo ng buhay (Shapeshifting the form of life). Is that not fascinating?

It's in our ancestral tongue to articulate that change is the only thing constant in this ever-morphing world.

For me, that means a radical restructuring of an unsustainable capitalist-extractivist model, one that prioritizes profit over preserving indigenous peoples' cultures and ancestral lands.

This is all super impressive but do you think art can do this, help solve the climate crisis?

I was already living in Europe when Yolanda struck, but I flew home for a holiday on the third week of November 2013, shortly after Yolanda happened. The news, the catastrophe, the devastation. 'What is happening?' It was disastrous!

And that really impacted my desire — how can we change society through art?

While art can't rally people to protect their environment [in an instant], its power lies in making you think in a deeper level. What does it mean for us as a society? Because this is an existential question.

If Yolanda is possible, then there must be more to come. And we need to be prepared and we need to be more agile and adapt to all of these existential crises because it will be more devastating, as a lot of climate scientists are warning us. In that Hollywood scenario of islands sinking, how will that pan out with us?

How would you like people to leave after seeing "Sediment Spirit"? How would you like for people to approach it?

The first bit is kind of like to open the conversation softly but in an honest and direct way. What I want the audience to get from "Sediment Spirit" is an understanding of how intrinsically we're part of nature and that we cannot control it anymore in ways that our former knowledge dictates.

That's the first thing.

But on a personal level, I want people to have a deep reflection of trying to unlock our ecological unconscious. We're part and parcel of nature. The idea now is that nature and humanity are no longer separate and our relationship with it will dictate what the future look like.

If we decide as a people to continue with this capitalist extractivist model of development — I'm uncertain about the future.

A lot of scientists and anthropologists believe we are part of nature. All of these things — birds and fish they know how to cohabitate with nature. they know how to care for it as well, like the cycle of life.

So for Sediment Spirit, it's that kind of reflection, that notion that we need to address this problem collectively.

It doesn't happen automatically or in 24 hours, even in a year but the moment we start considering all these things, the moment we allow it to enter our inner consciousness, it starts to brew.

Again, the power of art is slow. The effects of it will be felt in the coming years. it's acknowledging that this crisis is happening because if you're not affected by the crisis, you will dismiss it.

So I think what "Sediment Spirit" will try to bring to the audience is the enchantment, the pathway to how to understand and renew our relationship with nature and the environment. How we can act together collectively to impact something desirable for the planet.

## **MANILA BULLETIN**

### **Wetlands are vital for agriculture**

By: Ralph Lauren Abainza

Wetlands are like biological supermarkets where vast amounts of food let many organisms thrive. The seasonal water inundation provides suitable habitat for many plant and animal species. These are also the areas that cultivated the world's agriculture.

#### **The importance of wetlands**

A wetland is an area of land that is covered by water or saturated with water. According to the Convention on Wetlands of International Importance or RAMSAR, wetlands are officially defined as “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including the area of marine water the depth of which at low tide does not exceed six meters.”

Wetland ecosystems are also among the most productive and are comparable to rainforests and coral reefs, according to the United States Environmental Protection Agency (US EPA). Wetlands also help in flood control, groundwater replenishment, sediment nutrient retention, and water purification.

The world's wetlands are known to have paved the way for the rise of agriculture in many areas, with floodplains turned into rice fields and the semi-permanent water worlds turned into fish farms. Preservation of wetlands is important in making sure that the dependent agricultural lands can have sustainable sources of water and nutrients.

#### **Wetlands in the Philippines**

Wetlands can be categorized into two general categories: coastal wetlands, which include coral reefs, estuaries, and mangroves, and freshwater wetlands which include reservoirs, river basins, lakes, swamps, and marshes.

From Buguey Wetlands in Cagayan to Lake Sebu in South Cotabato and Sultan Kudarat, the Philippines has a lot of wetlands across the country. These wetlands not only provide livelihoods through eco-tourism, but they also help cultivate surrounding agricultural lands. In Mindanao, a housewife capitalized on the swampy environment of a wetland to expand her passion for gardening.

Another farmer in La Union had a successful stint in growing giant taro on her farm located in a wetland area. Edna Bucales is a 54-year-old farmer in Bacnotan, La Union cultivating various mountain crops, but much of her income is associated with a giant swamp taro crop she planted near a brook. The year-round supply of water from a nearby brook enables her crops to grow efficiently despite the generally dry and warm climate of La Union.

According to the Society for the Conservation of Philippine Wetlands, four of the wetlands in the Philippines are declared Ramsar sites: Olango Island in Lapu-Lapu, Cebu, Naujan Lake National Park in Oriental Mindoro, Agusan Marsh Wildlife Sanctuary in Mindanao, and Tubbataha Reef National Marine Park in Sulu Sea. These are wetlands highly valued for their contribution to sustaining biodiversity and heritage.

Aside from the direct effects of climate change, wetlands around the world are facing various threats such as pollution, land conversion, and overexploitation.

Practicing sustainable farming methods, considering the local ecosystems in planning developments, and ensuring the efficient use of natural resources will help mitigate threats to the wetlands and prevent them from being cradles of biodiversity and agriculture to becoming lands of despair and drought.

## MANILA STANDARD

### Harnessing power of renewable energy

By: Patricia Taculao

Modern technology and development undeniably made life easier for civilizations. Yet the advantages of modernization have their setbacks, particularly on the environment.

Climate change remains a primary concern among countries as they have felt the impact of extreme weather phenomena that threaten the longevity of numerous industries and human welfare.

There are several causes of climate change, foremost of which is energy pollution. Several studies from different organizations discovered that fossil fuels are the top contributors to greenhouse gases, which further global warming and environmental pollution. As a result, it causes rapid changes in the earth's temperature and the degradation of natural resources.

Coal remains the dirtiest fuel that emits more greenhouse gases than other energy sources. However, many industries, particularly in urban areas, continue to rely on coal for energy because it's accessible and cost-effective.

As global reports become increasingly concerning, governments have begun looking or shifting to renewable energy as a safer and more sustainable alternative. The Philippines is among those countries focusing on strengthening the use of the renewable energy sector.

Renewable energy pertains to the power that comes from natural resources. It replenishes itself at a rapid rate than its consumption.

Some renewable energy sources in the country include geothermal, hydro, biomass, solar, on- and off-shore wind, and waste-to-energy. Yet several roadblocks pose challenges to achieving complete reliance on renewable energy. Nonetheless, the Philippine government continues to find solutions, starting with the public and the set of rules on renewable energy.

One known initiative toward shifting to green energy in the Philippines is the Green Energy Option Program.

The GEOP is one of the Department of Energy's programs to meet the objectives of the Renewable Energy Act, which aims to accelerate the development of renewable energy sources, achieve self-reliance, and mitigate the impact of climate change in the country. It empowers consumers by encouraging them to switch to renewable energy as their source of electricity, which is cleaner and more environment-friendly than fossil fuels.

Before the government furthers the effort, they're looking to fine-tune particular rules in the GEOP to address challenges that discourage consumers from participating. There are less than 160-end users currently enrolled in the program.

Shifting to renewable energy is a concept that seems foreign to most Filipinos. Limited awareness among the population can hurt the cause rather than support it. Switching to renewable energy requires more than long-term planning and regulation from the government. It has to present opportunities like jobs, distribution, and fair prices to capture the public's attention.

Implementing apt improvements on the GEOP's design and clarifying its technicalities can help unlock the program's full potential and for renewable energy to become the norm among Filipinos.

Apart from benefiting Filipinos as they transition to renewable energy, a well-developed GEOP will encourage global companies to purchase similar sources and invest in its development.

Other efforts from the DOE's National Renewable Energy Program include a directive to use biofuels through a program that furthers its development through fund allocation and other similar steps. The NREP signals the country's leap to a focused and sustained drive toward energy security and improved access to clean energy.

### **Recognizing its long-term benefits**

The United Nations (UN) and other governing bodies across the globe recognize the relevance of renewable energy in combatting the effects of climate change. The best thing about renewable energy is that its sources are readily available and abundant in the environment.

Using renewable energy could help countries meet the goal of the Paris Agreement, which aims to limit global warming to below two, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. Possible results include the reversal of rapid

temperature changes that cause extreme weather phenomena and threaten the sustainability of various industries.

Besides lessening the number of greenhouse gases from fossil fuels in the atmosphere, there are other advantages to transitioning to renewable energy.

One notable benefit is protecting the public's health. According to the World Health Organization (WHO), around 99 percent of people in the world breathe air that exceeds air quality limits, thereby putting their well-being at risk. Fossil fuels contribute unhealthy levels of particulate matter and nitrogen oxide to the atmosphere.

Switching to renewable energy sources, like wind and solar, are better alternatives to protect the public's health.

From an economic standpoint, renewable energy makes more sense as it only requires a sizeable investment initially, but eventually becomes more affordable if implemented appropriately.

Moreover, the UN justified that reducing pollution and climate change impacts could save the world up to \$4.2 trillion annually by 2030.

The renewable energy industry also has the potential to create three times more job opportunities for the public than fossil fuels. Workers, especially skilled technicians, are responsible for implementing, monitoring, and maintaining the processes of these sustainable energy sources. It creates a community, where nobody gets left behind as the global population strives toward self-sufficiency through clean energy.

Although energy lies at the heart of climate change, solutions on how to address it are available. One ideal course of action at the moment is shifting to renewable energy. The Philippines has abundant renewable energy sources, but has yet to refine its implementation nationwide. Fortunately, the government isn't sleeping on the issue and has taken the necessary steps to the transition.

With a joint effort between the government, private sectors, and everyday Filipinos, the Philippines has the opportunity to solve the issue of climate change caused by energy pollution.

## NBC NEWS

### [Natural disasters, boosted by climate change, displaced millions of Americans in 2022](#)

By: Lucas Thompson

Natural disasters forced an estimated 3.4 million people in the U.S. to leave their homes in 2022, according to Census Bureau data collected earlier this year, underscoring how climate-related weather events are already changing American communities.

The overwhelming majority of these people were uprooted by hurricanes, followed by floods, then fires and tornados. Nearly 40% returned to their homes within a week. Nearly 16% have not returned home (and may never do so), and 12% were evacuated for more than six months.

The Census Bureau count is based on 68,504 responses it received as part of the Household Pulse Survey conducted Jan. 4-Jan. 16. The data collection is one of the few federal efforts to track displaced Americans, starting only in 2020. The bureau does note that the data is “experimental,” and is extrapolated based on its sample data.

“These numbers are very distressing,” said Michael Gerrard, director of the Sabin Center for Climate Change Law at Columbia University, who was not involved in the data collection. “These numbers are what one would expect to find in a developing country. It’s appalling to see them in the United States. ... They’re only going to get worse in the years to come because climate change is making extreme weather events more frequent and more severe.”

Some states experienced far more of an impact than others. Florida had more than 888,000 people displaced. Louisiana had more than 368,000 displaced.

The U.S. was hit by a series of major disasters in 2022. The National Oceanic and Atmospheric Administration said that 18 extreme weather events had each caused at least \$1 billion in damage. Climate experts have warned for years to expect more intense weather disasters as global temperatures rise.

The Census Bureau estimate, almost 1.4% of the U.S. adult population, is higher than other estimates. Data from the Internal Displacement Monitoring Center, part of the humanitarian organization The Norwegian Refugee Council, previously estimated that disasters displaced an average of 800,000 U.S. residents a year from 2008 through 2021.

“The United States is not in the least prepared for this,” Garrard said. “Our settlement patterns have not reflected the emerging risks of climate change to the habitability of some parts of the country.”

The data showed that the more than half a million people who never returned home experienced multiple hardships, including lack of housing, food, water, sanitation and child care.

“These are all things that we take for granted in a modern society,” Gerrard added. “Its absence is deeply disruptive to physical and emotional health as well as to child development.”

The data also showed disparities between people of different economic status, race and identities. Those earning less than \$25,000 a year had the highest evacuation rate of any economic group, and Black and Hispanic residents had slightly higher evacuation rates than white residents.

According to the data, adults who identify as LGBTQ were disproportionately affected — 4% of LGBTQIA+ adults had to leave their homes compared with 1.2% of straight, cisgender people.

“It’s important to note that a lot of these individuals that are LGBTQ are often also considered to be socially vulnerable, and really putting a strong intersectional lens to disaster response preparedness and recovery,” said Michael Méndez, a professor of environmental policy and planning at the University of California, Irvine.

“Much of the LGBT community that’s vulnerable, and most socially vulnerable to disasters, are those that are African American, transgender and low income,” he said. “Oftentimes, that’s why they’re rendered invisible in the context of disaster policy and planning and preparedness. People write them off as not needing to provide extra resources for this community.”

## PHILIPPINE DAILY INQUIRER

### [Humanity: Biggest obstacle to climate change](#)

By: Andrew Sheng

Why is it so difficult to tackle climate change? Sixty years ago, the Club of Rome's report "Limits to Growth" already projected how human activity was going to change the planet, heating up the climate through carbon emissions that would raise the sea level, change the weather, and damage food, water, and natural resources.

Since most people do not understand how their individual activities change the planet, scientists worked hard to provide more evidence, but economists thought they had a perfect market solution.

If carbon markets can be created to price carbon costs and benefits, emitters could pay those who are willing to sequester carbon at the right price. Unfortunately, carbon markets are still nascent in most countries and are so fragmented that their impact is limited. People don't trade carbon if they don't understand it.

Dealing with climate change is a complex system change. This is tough because everyone is connected or interdependent in this complex world. This leads to "collective action traps." Human beings find it difficult to work together because of different values, objectives, and circumstances. Each expects the other to act, whereas if all do not cooperate, nothing will change. Like a network of individuals bound to each other, one virus can take the whole network down. This inability to act is called the "tragedy of the commons" because individuals, for their selfish actions, destroy the commons, or what is considered public good.

When the corporate world adopts ESG (environment, society, and governance) standards to improve corporate social responsibility (CSR), it forgets that all three are entangled together.

Fundamentally, poor human governance is actually the evil that creates environmental destruction and social injustices.

United Nations special envoy on climate action Mark Carney identified what he called the "tragedy of horizon," namely, people cannot cooperate because of different time horizons. Profit-motivated companies are reluctant to cut carbon emissions because they involve additional costs. Corporate quarterly and annual financial reporting cycles

mean that CEOs whose bonuses are tied to short-term profits decline long-term investments for the future.

Similarly, few politicians in a democracy will make very tough decisions for the long term because they all face electoral cycles of not more than four to five years. In seeking popularity, they will not act to inflict pain through tougher regulations or higher taxes. The tragedy of horizons almost guarantees that long-term or public interests will be sacrificed for short-term gain.

All these explain why governments and corporations find it hard to change. However, communities (either urban or rural) that face the consequences of climate change, such as those hurt by wild forest fires, rising seas, food shortages, water pollution, etc., are more driven to work together when they identify common threats. The bottom-up approach works better because those who are most directly affected by climate threats have a common fate and therefore are incentivized to work together to meet these challenges. On the other hand, governments and corporations are hierarchical, divided into top-down bureaucracies that have few incentives to work together because each seeks to deliver partial results for their own vested interests.

The tragedy of horizons reveals a fundamental mismatch of different cycles. What goes around must come around—meaning that there are consequences for any action. Agricultural communities work together because planting any crop works in cycles and seasons. You cannot rely on too many chemical fertilizers or pesticides without polluting or poisoning the crops. Grain crops like rice and wheat or vegetables can be planted once or twice a year. Fruit trees and trees cultivated for their wood have cycles that last decades, since the former may take four to five years before they bear fruit, and commercial forests may take much longer, requiring planned cutting, planting, and replanting. Indigenous farmers know that you cannot rely on monocrops, which kill the soil, and that diverse crops, as well as crop rotation, would regenerate the soil.

The real barrier in tackling climate change is therefore high population *Homo sapiens*, a species that has grown to become a monoculture that is killing biodiversity through the overconsumption of natural resources. Indigenous people have always lived with nature. Life is a cycle from dust to dust, but death returns our physical body to the soil, so that microbacteria, viruses, and fungi replenish the soil from which other plants, worms, and life regenerate. Tackling climate warming and biodiversity cannot be two separate tracks, as is being done through COP27 in Egypt and COP15 on biodiversity in Canada.

When individuals, communities, corporates, and states want to deal with climate action, they only have to look in the mirror as to the major culprits. Until we become aware that we, the collective humanity, are the ultimate threat to our own existence, through either nuclear war or wanton waste of what nature provided, we will never stop climate warming.

Life begins with a single cell, and is a journey from life to death to renewal. Not dust to dust, but soil that nurtures life to soil. Destroy that diversity, and we destroy ourselves as part of that diversity. Asia News Network

## Big push for sustainable mining

Sidelined during the previous administration, the mining industry is getting a much-needed boost under the Marcos Jr. regime. The Philippine Development Plan (PDP) 2023-2028, according to Undersecretary Rosemarie Edillon of the National Economic and Development Authority, prioritizes the revitalization of the Philippine mining sector. Such focus on mining is understandable. The Mines and Geosciences Bureau has earlier identified about nine million hectares nationwide as potential mineral-rich areas, but less than 3 percent of these are covered by mining contracts.

A month after President Marcos Jr. assumed office in July last year, his chief economic official had already noted that the mining industry “holds the greatest potential to be a key driver in our economic recovery and long-term growth.” Gracing the listing of Philex Mining Corp.’s shares at the Philippine Stock Exchange, Finance Secretary Benjamin Diokno said the mining industry could help ensure a sustainable recovery of the economy from the disruptions of the COVID-19 pandemic as this activity requires sizable investments that generate jobs, while demand for mine output is high, resulting in the current high metal prices.

But the government’s renewed interest in supporting mining comes with a caveat. The mining industry must strictly adhere to responsible and sustainable mining practices, and the sector must strike a balance between protecting the environment, uplifting local communities, and supporting the government’s socioeconomic agenda. There should be no repeating the mining disasters of the past, notably the likes of Marcopper’s ruining the ecosystem, and the livelihood, of its host community in Marinduque. In Diokno’s words: “This is a nonnegotiable condition, so we can guarantee the sustainability of the industry and the strong economic growth of its host communities.”

Evidence of such stricter governance on the industry can be seen in the recent case of Altai Philippines Mining Co., which was ordered by the Department of Environment and Natural Resources (DENR) to cease and desist mining operations on Sibuyan Island after vigorous opposition from the affected communities even led to a violent dispersal by police. The DENR specifically ordered the company to “cease and desist from the construction and operation of its causeway,” suspended its ore transport permit, and denied its application for a miscellaneous lease agreement. The order likewise urged the Romblon Provincial Environmental and Natural Resources Office to conduct an investigation of “the potentially damaged seagrass and other marine resources,” thus exposing the mining firm to potential legal actions. What is sad is that the DENR acted only after several days of protests against the company, when it should have known the compliance of mining firms during its periodic audits.

Another laudable thrust of the Marcos Jr. administration on the mineral sector is the urgent need to rehabilitate a number of mined-out areas. In doing so, the administration should look into correcting the wrong mining practices wherein companies abandon their mining sites after years of mineral extraction without being required to rehabilitate the areas, leaving the burden of fixing the mined-out areas on the government. Since such efforts now will likely be stalled by the government's lack of funds, it can revisit the proposal of private stakeholders in 2014. The Chamber of Mines of the Philippines (COMP) is basically pushing for a public-private partnership approach to the rehabilitation of abandoned mines, expressing its members' readiness to foot the bill if regulators give them the opportunity.

The government need not shoulder funding for these projects. As COMP pointed out, the private sector is more than willing to take on the challenge of rehabilitating abandoned mines, and the government just needs to allow it to be a viable business proposition. At that time, data from the Mines and Geosciences Bureau showed that of the 31 large-scale mines that have shut down since the 1960s, 16 were under initial assessment for rehabilitation. Of these mines, however, only the Bagacay mine in Samar was being restored. Indeed, work on rehabilitating abandoned mines has been terribly slow. The solution is for the Marcos Jr. administration to immediately cancel all prior rights or contracts of these mines and have these made available for mining application.

In the end, however, there is nothing that will convince those who view all mining activities as bad for the environment and are pushing for a total ban. But what is true here and elsewhere in the world is that governments have to balance the interests of the economy and the environment. For the Philippines, the rehabilitation of mined-out areas, with the help of the private sector, is a very sensible start. Moving forward, the government can learn lessons from Australia and Canada, touted as the leading countries when it comes to sustainable mining.

## PHILIPPINE NEWS AGENCY

### [AboitizPower signs energy MOU during PBBM's Tokyo visit](#)

By: Kris Crismundo

MANILA – President Ferdinand R. Marcos Jr. has witnessed the signing of memorandum of understanding (MOU) on clean technology between Aboitiz Power Corp. and Japan's largest power generation firm, JERA Co., Inc., during his official visit in Japan.

In a disclosure to the Philippine Stock Exchange, AboitizPower said its chairperson Sabin Aboitiz and JERA president Satoshi Onoda signed an MOU to explore 'greener fuel', which involves the use of ammonia and hydrogen in power generation.

Through the MOU, AboitizPower and JERA will undertake feasibility assessment on ammonia co-fired power generation and the development of the ammonia and hydrogen value chains in the country.

The use of alternative fuels supports the government's initiatives toward reducing carbon footprint to mitigate the impacts of climate change.

"By joining forces in the pursuit of greener fuels, our two companies are not only advancing the cause of sustainability, but also paving the way for a cleaner and more vibrant future. Ammonia offers a compelling solution for decarbonizing the power sector and by looking into it, we are taking a step towards developing the infrastructure needed to support the ammonia and hydrogen value chains," Aboitiz said.

AboitizPower said applying the greener fuel technology to the existing coal-fired power plants will result in a reduction of carbon dioxide emission by up to 50 percent.

"Through this collaboration, we will support Aboitiz's power decarbonization efforts while also considering additional opportunities for advancing technology development in the Philippines. This MOU allows JERA to leverage its experience and capabilities to support both AboitizPower and the Philippines to reach their emissions targets," Onoda said.

In 2021, JERA bought 25.01 percent in AboitizPower from Aboitiz Equity Ventures, Inc. at USD1.463 billion, and another 1.99 percent from Aboitiz family's privately held firm Aboitiz & Company.

During his meeting with Japanese firms Thursday, Marcos underscored the importance of AboitizPower-JERA partnership in the development of the country's power sector.

"Of course, the investment is important, but the transfer of technology is also extremely important and that will give the Philippines a self-sufficiency, which we have been missing," he said.

## Effects of productive PBBM Japan trip to be felt 'rapidly'

By: Ruth Abbey Gita-Carlos

MANILA – President Ferdinand R. Marcos Jr. on Friday said the effects of the series of business meetings in Japan will be felt "very rapidly" after his five-day working visit in Tokyo.

Marcos said his trip is "very productive" considering the signing of 35 key investment deals between the Philippines and Japan.

"And I think that we will be able to feel the effects of these discussions, of these agreements, very, very soon, very rapidly back home in the Philippines," Marcos said in an interview.

Marcos said his official visit to Japan is "particularly important" because it is "setting down the blueprint" for the two nations' relations as they lay out their recovery plans from the coronavirus disease 2019 (Covid-19) pandemic.

He said the 35 business deals signed also "cut across the whole gamut."

"They have supported our agriculture, they have supported our attempts at making the digitalization of the Philippines a more widespread phenomenon," Marcos said.

"We're talking about [agriculture], we are talking about digitalization, we are talking about industry, we are talking about automotive development, we are talking about energy, even education [and] tourism," he added.

### **'Deeper' relations**

Marcos also expressed gratitude to the Japanese government and business leaders he met for being "very open" to help "increase the development of our country."

The meetings yielded positive results, Marcos said, noting several pledges will also help the Philippines in improving security and defense, and climate change mitigation and adaptation, among others.

Maros said the commitments from the Japanese government and business sector is an indication of "deeper" ties between Manila and Tokyo.

"Those relations have grown and have become deeper as time has gone on and we owe Japan a debt of gratitude for the support that they have given us in those years, even in the '60s, in the '70s and all the way up to now, where they have supported our infrastructure development," he added.

"[This is] in terms of again, those areas: infrastructure, digitalization, agriculture, some of the traditional areas with which we had always dealt with Japan, but some new areas, areas such as security and defense and also mitigation and adaptation to the effects of climate change," Marcos said.

### **Expansion of businesses**

One of the Japanese firms that sought to expand their operations in the Philippines is Marubeni Corp., a major integrated trading and investment business conglomerate.

Marubeni officials, led by chief executive officer Masumi Kakinoki, reaffirmed their partnership with the Philippines in a meeting with Marcos in Tokyo, also on Friday.

"Now, in addition to the traditional generation system, we are very much committed to increase renewable energy like mini hydro, solar and wind project and we are discussing with your country, our local partner to develop such kind of new facilities," Kakinoki told Marcos, thanking the President for the "solid partnership."

Marcos also expressed gratitude to Marubeni, saying the Philippines' partnership with the private firm "extends beyond the corporate and government-to-government partnership."

"It's a long-standing friendship, I think, at a very personal level," he said, noting Marubeni's "very, very high" profile in the Philippines.

### **Job creation**

Meanwhile, the Federation of Free Workers (FFW) welcomed the billions of pesos worth of investment pledges from Japanese companies.

According to FFW national vice president Jun Ramirez, these industries will produce thousands of jobs in the country, including the semiconductor and electronics industries

“We are elated at the news, stating that the investments would create over 10,000 jobs for Filipinos, which is a significant development that could help ease the country's unemployment problem,” he said in a statement over the weekend.

It was reported that Marcos met with Japanese businessmen involved in semiconductors, electronics, and wiring harness sectors, who are interested in expanding their operations in the Philippines.

Ramirez said Japanese employers have healthy labor relations with strong and responsible unions as workers' bargaining agents.

At the same time, he said investments in agriculture and manufacturing are most needed today as these are considered growth areas.

## THE MANILA TIMES

### Cagayan students pledge wetlands protection

By: Leander C. Domingo

THE Department of Environment and Natural Resources (DENR) in Region 2 (Cagayan Valley) enlisted about 100 students through the Cagayan provincial environment and natural resources office for the protection and restoration of wetlands in the town of Buguey in Cagayan province.

Students and teachers from Leron Elementary School and Minanga Elementary School have committed to join the DENR's effort to protect said 500-hectare wetlands which compose 80 percent of the municipality's total land area.

Carolyn Tumamao, DENR Region 2 information officer, said the "Pinas: The Basura Buster" (PBB) program helped the students pledge to practice solid waste management by proper segregation at the source, as well as proper disposal and recycling to keep wastes from going to the different bodies of water.

PBB is a mascot that serves as an icon for the DENR's solid waste management program.

The PBB environmental education session on Feb. 2, 2023 also kicked off this year's celebration of World Wetlands Day as part of the Buguey Wetlands Awareness Campaign.

Meanwhile, a tree-growing activity was conducted around Bangalao Lake in Santa Teresita town in Cagayan. It was spearheaded by the community environment and natural resources office (Cenro) in Aparri town with the participation of Cenro employees, local government unit personnel, barangay (village) officials and residents.

## [Renewable energy firm ramps up target to 5,000 MW](#)

CITICORE Renewable Energy Corp. (CREC) is ramping up its solar energy targets for the next five years.

The firm plans to launch 5,000 megawatts (MW) of solar power projects in the next five years from its initial target of 1,500 MW for the same period because of the country's growing power requirement.

"We are upgrading our pipeline projects from originally 1.5 gigawatts (GW), or 1,500 MW, and the target is to break ground 1 GW of new projects this year," CREC President and Chief Executive Officer Oliver Tan said in an interview over the weekend.

"So, meaning, by early next year, we will have almost 1.25 GW of installed capacity," he added.

Tan said the projects would add between P7 billion and P8 billion to the company's top line.

He added that CREC was allocating \$800 million in capital expenditure (capex) this year to fund the new projects, which are expected to be completed by early 2024.

Majority of the capex this year will be spent on a 600-MW solar project in Batangas, he added.

Aside from expanding its solar power portfolio, Tan said CREC is also investing in battery energy storage systems this year.

He added that investments in energy storage systems were critical to accelerate and smoothen the transmission of output coming from renewable energy projects.

"We have a good policy in supporting our renewable energy," Tan said.

"What the government needs to support will be the development of energy storage technology."

With its new targets for the medium term, CREC is expected to invest \$4 billion to fund the 5,000 MW in solar power projects over five years.

To fund these projects, CREC plans to go public this year but Tan declined to divulge other details yet. PNA

## CCC IN THE NEWS:

### THE MANILA TIMES

#### [LGUs can avail of funds for climate adaptation projects](#)

By: Bella Cariaso

The Climate Change Commission (CCC) said that local government units (LGUs) can now submit project proposals to access the People's Survival Fund (PSF), a grant facility enabling them to implement local climate change adaptation initiatives.

The Department of Finance (DoF), chairman of the PSF Board, issued the call for proposals for the LGUs.

According to CCC, LGUs need to complete the following documentary requirements to access the PSF: the letter of intent; accomplished project proposal template; adaptation references such as climate risk and vulnerability assessments; enhanced comprehensive land use, development plans, local climate change action plan; and the annual investment plan.

The PSF was launched to provide long-stream finance for adaptation projects of LGUs and local community organizations aimed at increasing the resilience of communities and ecosystems to climate change.

Under Republic Act 10174 of 2012, the PSF is managed by a board, chaired by the DoF, with the Climate Change Commission Philippines, the Department of Budget and Management, the National Economic and Development Authority, the Department of the Interior and Local Government, the Philippine Commission on Women and sectoral representatives as members.

Submissions can be made through the PSF Board Secretariat in the DoF. The deadline for the call for proposals will be on March 31, 2023.

**=END=**