



# **NEWS ROUNDUP**15 JANUARY 2024 [ 07:30 am]

- Canada eyes Philippine critical minerals sector amid global 'green' energy push
- John Kerry to step down as US climate envoy
- Germany willing to work with PH on climate disaster fund, envoy says
- [Opinion] The hottest year yet, and now, El Niño
- Time for climate justice UN chief
- PH-Germany boost ties in climate, energy sector
- Renewables on pace to overtake coal as top power source by 2025
- PDRRMC to head task force vs climate change
- Bukidnon LGU 1st in N. Mindanao to adopt local climate action plan
- Pangasinan environment office encourages use of e-vehicles
- Climate change at forefront of PH-Germany cooperation
- Global warming pushes ocean temperatures off the charts study

## **BUSINESS MIRROR**

<u>Canada eyes Philippine critical minerals sector amid global 'green' energy push</u>
By: Malou Talosig-Bartolome

Canada is interested in helping the Philippines build its capacity to extract critical minerals "responsibly, ethically and sustainably" to help the global economy transition to clean energy, Canadian Ambassador to Manila David Hartman said.

## **CNN**

# John Kerry to step down as US climate envoy

By: Ella Nilsen

US climate envoy John Kerry plans to step down from his post by this spring, a source close to Kerry confirmed to CNN.

#### **GMA NEWS**

# Germany willing to work with PH on climate disaster fund, envoy says

By: Anna Felicia Bajo

Germany has expressed willingness to work with the Philippines on the Loss and Damage Fund that aims to address the impact of climate change.

## **MANILA BULLETIN**

## [Opinion] The hottest year yet, and now, El Niño

2023 was the hottest year on record. The report from the Copernicus Climate Change Service (C3S) placed into hard facts and figures what the world had already been witnessing. Again, we are reminded of what we are facing with climate change.

## **MANILA STANDARD**

# Time for climate justice — UN chief

The European climate agency reported last week that record global heat last year showed an overall increase of 1.48°C above pre-industrial levels—just a fraction below the 1.5-degree threshold laid out by the historic Paris Agreement on climate change.

#### **PALAWAN NEWS**

## PH-Germany boost ties in climate, energy sector

By: Andrew Atienza

President Ferdinand R. Marcos Jr. expressed his gratitude to Germany on Thursday for cooperating with the Philippines in addressing climate change, during a meeting in Malacañang.

## PHILIPPINE DAILY INQUIRER

## Renewables on pace to overtake coal as top power source by 2025

By: Meg J. Adonis

Renewables are set to overtake coal as the largest source of power generation globally by 2025, an international energy think tank said, especially as clean energy saw its fastest growth last year.

#### PHILIPPINE INFORMATION AGENCY

# PDRRMC to head task force vs climate change

By: Rachel Ganancial

The Provincial Disaster Risk Reduction and Management Council (PDRRMC) will spearhead a task force to mitigate the impacts of climate change in various sectors in the province of Palawan.

## PHILIPPINE NEWS AGENCY

## Bukidnon LGU 1st in N. Mindanao to adopt local climate action plan

By: Nef Luczon

The municipality of Kadingilan in Bukidnon province is poised to become a pioneering local government unit (LGU) in creating an Enhanced Local Climate Change Adaptation Plan (ELCCP) in Northern Mindanao region.

# Pangasinan environment office encourages use of e-vehicles

By: Hilda Austria

The Community Environment and Natural Resources Office (Cenro) in Central Pangasinan is supporting the use of electric vehicles as it promotes clean energy for better air quality.

## **PTV**

## Climate change at forefront of PH-Germany cooperation

By: Brian Jules Campued

Germany's Federal Minister for Foreign Affairs Annalena Baerbock has expressed interest in tackling climate change mitigation, particularly setting up a loss and damage fund with the Philippines during a meeting with President Ferdinand R. Marcos Jr. in Malacañang on Thursday, Jan. 12.

# THE PHILIPPINE STAR

# Global warming pushes ocean temperatures off the charts — study

In 2023, the world's oceans took up an enormous amount of excess heat, enough to "boil away billions of Olympic-sized swimming pools," according to an annual report published Thursday.

**Information and Knowledge Management Division** 

#### **BUSINESS MIRROR**

<u>Canada eyes Philippine critical minerals sector amid global 'green' energy push</u>
By: Malou Talosig-Bartolome

Canada is interested in helping the Philippines build its capacity to extract critical minerals "responsibly, ethically and sustainably" to help the global economy transition to clean energy, Canadian Ambassador to Manila David Hartman said.

This developed as Canada's minister for international development, Ahmed Hussen, visited the Philippines Thursday and announced Canada's aid worth C\$15 million (P626 million) to help the Philippines adapt to climate change and for local officials to implement the Universal Health Care program.

Help PHL extract critical minerals

The Philippines is the fifth most mineralized country in the world with untapped reserves of copper, gold, nickel, zinc and silver worth \$1 trillion.

One of those "critical minerals," such as lithium, nickel, cobalt, manganese, graphite, copper and aluminum are essential components to build battery storage for solar power as well as for wind turbines and other electricity networks to electric vehicles.

"We cannot have clean energy without these critical minerals. The candid reality is [that] the global community needs the Philippines.

The Philippines is the fifth most mineralized country in the world with untapped reserves of copper, gold, nickel, zinc and silver worth \$1 trillion.

One of those "critical minerals," such as lithium, nickel, cobalt, manganese, graphite, copper and aluminum are essential components to build battery storage for solar power as well as for wind turbines and other electricity networks to electric vehicles.

"We cannot have clean energy without these critical minerals. The candid reality is [that] the global community needs the Philippines.

"We are sordidly conscious of the fact that the extraction of minerals here in the country has a storied past... A lot of sensitivities among the indigenous communities and other populations and so I think we can provide the capacity building to the government of the Philippines with the support of the people of the Philippines to help create the social license for the Philippines to be able to capitalize on the mineral wealth that exists in this country," Hartman said.

He said they pitched this during the meeting of Minister Hussen with Environment and Natural Resources Secretary Toni Yulo-Loyzaga.

## Canada ODA in PHL for reforestation

Canada's emphasis on responsible mining forms part of its overall Indo-Pacific engagement, including the Philippines.

This is the reason Canada has committed to grant C\$8 million (P334 million) over the next five years to the Forest Foundation Philippines to finance nature-based solutions that would build resilience among vulnerable communities from climate change.

Among the projects Canada has in mind are reforestation, coastal wetlands restoration and watershed restoration.

These initiatives aim to target six regions across the country representing key biodiversity or protected areas.

#### Canada ODA in PHL for health services

Ottawa has also allocated C\$7 million (P292 million) to the Philippines for a spread of six years to finance projects that would improve the capacity of local governments in helping Filipinos access the universal health care program.

The Canadian grant for health services target vulnerable population, such as women and girls, and indigenous people, in four geographically isolated and disaster-prone provinces.

#### MOU on Canadian ODA to PHL

Minister Hussen also met with his counterpart, National Economic and Development Secretary Arsenio Balisacan.

During his meeting with Balisacan and Yulo-Loyzaga, they discussed how Canada could work with the Philippines on issues such as fisheries management, biodiversity, sustainable infrastructure, food security, agricultural modernization, energy transition, energy supply and climate finance.

"Canadian overseas development assistance is meant to be deployed in the Philippines in a manner that compliments, supplements, and supports Philippine national priorities," Minister Hussen said.

He said the Philippines and Canada are negotiating for a memorandum of understanding so that Canada's ODA will be "aligned deliberately" with the priorities of the Philippine government and the private sector in the Philippines.

Hussen's visit marks the first high-level visit of Canadian officials to the country as Manila and Ottawa will mark the 75th year of diplomatic relations by December this year.

#### CNN

# John Kerry to step down as US climate envoy

By: Ella Nilsen

US climate envoy John Kerry plans to step down from his post by this spring, a source close to Kerry confirmed to CNN.

Kerry is leaving the position after three years at the helm of US climate diplomacy under the Biden administration. The source close to Kerry said he will still attend the World Economic Forum in January and is expected to attend the Munich Security Conference in February.

The 80-year-old former secretary of state and Democratic nominee for president led US negotiations at three international climate summits, the most recent of which was held in Dubai.

Kerry specifically prioritized restarting international climate talks between the US and China, and was key in negotiating the November Sunnylands agreement, a wideranging climate agreement between the two countries before COP28.

Axios first reported Kerry was stepping down and intends to join the Biden campaign. CNN has reached out to the Biden campaign and the White House for comment.

Before joining the Biden administration, Kerry had long worked on climate issues. As secretary of state, he played a key role in negotiating the Paris agreement, which was adopted by nearly 200 nations in 2015 and was aimed at addressing the negative impacts of climate change.

And in 2019, Kerry co-founded a bipartisan initiative of world leaders and celebrities to combat the climate crisis called World War Zero.

Kerry also served alongside Joe Biden in the Senate for decades. He was first elected to the Senate to represent Massachusetts in 1984 after serving as lieutenant governor of the state under Gov. Michael Dukakis.

In 2004, Kerry won the Democratic nomination for president before losing the general election to incumbent President George W. Bush. In 2009, when Biden became vice president, Kerry took over his role as chairman of the Senate Foreign Relations Committee. He was nominated to serve as secretary of state by Barack Obama in 2012.

Kerry also served in the Navy in Vietnam as a gunboat officer on the Mekong Delta and was awarded the Silver Star, the Bronze Star and three Purple Hearts.

#### **GMA NEWS**

# Germany willing to work with PH on climate disaster fund, envoy says By: Anna Felicia Bajo

Germany has expressed willingness to work with the Philippines on the Loss and Damage Fund that aims to address the impact of climate change.

This was pronounced by German Foreign Minister Annalena Baerbock during her courtesy call with President Ferdinand "Bongbong" Marcos Jr. on Thursday.

She said addressing climate change is where bilateral ties between the Philippines and Germany could be strengthened.

"This is also something which we believe can be a next step in our cooperation on the climate issue, even mentioning the loss and damage fund. This is really dear to my heart because I was doing a lot of policy beforehand. We said we have to do something about loss and damage," Baerbock said.

She also mentioned the interest of big German companies in investing in the Philippines' renewable energy sector.

Baerbock said this would involve discussions on raw materials and skilled labor, "This is really a field where it's a win-win situation or even a triple win situation for employees, for workers, also for our countries," she said.

Marcos, for his part, expressed gratitude to Germany for its willingness to help the Philippines in addressing climate change as he stressed that the country has been a vital partner in this area.

To recall, Environment Secretary Ma. Antonia Yulo-Loyzaga disclosed that the Philippines has garnered a seat on the board of the Loss and Damage Fund.

Marcos earlier said allowing the Philippines to host the Loss and Damage Fund would symbolize inclusivity and will also ensure that the needs of the countries most affected by climate change would be addressed.

## **MANILA BULLETIN**

# [Opinion] The hottest year yet, and now, El Niño

2023 was the hottest year on record. The report from the Copernicus Climate Change Service (C3S) placed into hard facts and figures what the world had already been witnessing. Again, we are reminded of what we are facing with climate change.

"Climate change intensified heatwaves, droughts and wildfires across the planet, and pushed the global thermometer 1.48 C above the preindustrial benchmark," the report said.

"Nearly half the year exceeded the 1.5C limit, beyond which climate impacts are more likely to become self-reinforcing and catastrophic."

"Reliable weather records that date back to 1850 show that 2023 temperatures exceed those of any period in at least the last 100,000 years."

In the Philippines, the changes in weather patterns which can exacerbate certain impacts related to El Nino is already here and is expected to affect 77 percent of the country.

Less rainfall will bring drought to many areas in the country and will affect our food supply. That will reduce agricultural produce and increase its prices, or cause a shortage.

PAGASA, the state weather bureau, had advised on the coming of this weather phenomenon since last year. But it is information that many may have taken lightly, until they are deep into the dry spell and health and livelihoods are affected. If you have health issues that may be affected by high temperatures, you can still act now.

President Marcos has reactivated Task Force El Niño to mitigate the effects of the phenomenon that is expected to persist until the end of second quarter of 2024. It will focus on five key sectors such as water, agriculture, energy, health, and public safety.

The factors that contributed to climate change are now well-known. Just to emphasize and to remind, we will quote the same EU monitor report:

"In 2023, carbon dioxide and methane concentrations reached record levels of 419 parts per million and 1,902 parts per billion, respectively. Methane is the second-largest contributor to global warming after CO2, and is responsible for around 30 percent of the

rise in global temperatures since the industrial revolution, according to the United Nations Environment Programme (UNEP)."

Fossil fuels — coal, gas and oil — have been identified as the main cause of climate warming. In November 2023, a climate agreement was reached at COP28 in Dubai calling for the gradual transition away from fossil fuels.

The global community, governments, and the private sectors have been moving to mitigate climate change. Yet we have reached the critical threshold. We need to do more in the community level and even in the family unit. Reducing one's carbon footprint by adjusting mobility and lifestyles can contribute to a relevant result.

The year was a mere preview of the "catastrophic future that awaits us if we don't act now," UN Secretary-General Antonio Guterres said.

#### MANILA STANDARD

# Time for climate justice — UN chief

The European climate agency reported last week that record global heat last year showed an overall increase of 1.48°C above pre-industrial levels—just a fraction below the 1.5-degree threshold laid out by the historic Paris Agreement on climate change.

Under the deal agreed by 193 countries in 2015 in the French capital, sticking to the limit will help humankind avoid the worst impacts of rising temperatures.

This month is also on track to be so warm that for the first time ever, a 12-month cycle may exceed the 1.5°C threshold, according to Europe's Copernicus climate agency.

Responding to the news at the regular briefing for correspondents in New York, UN spokesperson Stéphane Dujarric said Secretary-General António Guterres "believes that humanity's actions are scorching the Earth" and that last year "was a mere preview of the catastrophic future that awaits if we don't act now."

The UN chief said that the necessary response to record-breaking temperatures is "path-breaking action."

"Mr. Guterres believes that leaders must commit to serious new national climate action plans" rapidly and fairly "and invest in helping vulnerable countries to combat climate chaos,". Dujarric said.

"We can still avoid the worst of the climate catastrophe, he believes, but only if we if we act now with the ambition required to limit the rise of global temperatures to 1.5°C and deliver climate justice." UN News

#### **PALAWAN NEWS**

# PH-Germany boost ties in climate, energy sector

By: Andrew Atienza

President Ferdinand R. Marcos Jr. expressed his gratitude to Germany on Thursday for cooperating with the Philippines in addressing climate change, during a meeting in Malacañang.

Marcos emphasized that Germany has been a vital partner for the country in this area, particularly in introducing important technologies useful to the Philippines.

Last month, Environment Secretary Maria Antonia Yulo-Loyzaga stated that the Philippines, as a member of the 'Loss and Damage' Board, would prioritize urging other nations to address biodiversity destruction and species loss in countries vulnerable to climate change.

Loyzaga mentioned that the pledges for the Loss and Damage Fund as of December 2023 totaled US\$792 million, far exceeding the initial expectation of US\$200 million.

However, Germany's Foreign Minister Annalena Baerbock expressed her willingness to tackle the Loss and Damage Fund in its cooperation with the Philippines regarding climate change during a meeting.

"This is also something which we believe can be a next step in our cooperation on the climate issue even mentioning the loss and damage fund. This is really a dear to my heart because I was doing a lot of policy beforehand. We said we have to do something about loss and damage," Baerbock said.

He said that the topic of climate change is an area where bilateral relations can be strengthened. He cited the interest of major German companies in investing in the Philippine renewable energy sector.

Baerbock added that this would involve discussions on raw materials and skilled labor.

"This is really a field where it's a win-win situation or even a triple win situation for employees, for workers, also for our countries," Baerbock said.

## PHILIPPINE DAILY INQUIRER

Renewables on pace to overtake coal as top power source by 2025

By: Meg J. Adonis

Renewables are set to overtake coal as the largest source of power generation globally by 2025, an international energy think tank said, especially as clean energy saw its fastest growth last year.

A report by the International Energy Agency (IEA) showed that global renewable energy capacity surged by a record high 50 percent to 510 gigawatts (GW) in 2023, with solar power accounting for 75 percent of new capacities worldwide.

This massive acceleration makes it possible for renewable energy in the world to expand to 7,300 GW by 2029, IEA said.

Solar PV and wind are projected to account for 95 percent of the expansion, allowing renewables to finally surpass coal in terms of power generation.

Globally, the share of coal in total global generation was at least 36 percent in 2023, while renewables stood at 30.2 percent, according to IEA.

"Onshore wind and solar PV are cheaper today than new fossil fuel plants almost everywhere, and cheaper than existing fossil fuel plants in most countries," said Faith Birol, IEA executive director.

In the Philippines, IEA's projection shows that the share of renewables in the energy mix will inch up to 27 percent by 2028 from the current 22 percent. The Philippine government aims to reach its 35-percent renewable share goal by 2030.

Renewable energy is likewise expected to expand by 9 GW over the 2023 to 2028 period, with the Department of Energy's Green Energy Auction Program seen as the main growth driver.

However, IEA also pointed out that renewable energy could further expand if the country addressed grid connection delays, the high cost of financing, lengthy permitting procedures and inadequate transmission infrastructure.

There is also an "overcapacity" in existing coal-fired power plants in the Philippines, as well as Indonesia, Thailand and Malaysia. Nearly 60 percent of the Philippines' power capacity comes from its coal power plants.

"The most important challenge for the international community is rapidly scaling up financing and deployment of renewables in most emerging and developing economies, many of which are being left behind in the new energy economy," Birol said.

Following the 28th UN Climate Change Conference (COP28) held in November last year, IEA said countries have committed to tripling the current global renewable capacity by 2030.

Birol reiterated that such a goal could only be attained through policy changes aimed at fast-tracking renewable energy development.

"It's not enough yet to reach the COP28 goal of tripling renewables, but we're moving closer—and governments have the tools needed to close the gap," Birol said. "We will be following very closely to see whether countries are delivering on their promises and implementing appropriate policies.

#### PHILIPPINE INFORMATION AGENCY

# PDRRMC to head task force vs climate change

By: Rachel Ganancial

The Provincial Disaster Risk Reduction and Management Council (PDRRMC) will spearhead a task force to mitigate the impacts of climate change in various sectors in the province of Palawan.

In a committee hearing on January 9, it was agreed that the council would head the task force, and secretariat tasks would be given to the PDRRM Office.

Board member Ryan Maminta said the province needs long-term programs that will address the problems caused by climate change and underscore sustainability through the collective efforts of agencies.

"Dapat ang direksyon natin ay long-term plans and programs that will also provide long-term solutions, leading to resiliency in terms of food security, the environment at other sectors ay makinabang talaga," he said.

Some of the concerns raised by agencies as a result of the observed impact of climate change are the possibility of forest fires, water safety, harmful algal blooms, and diseases of seaweeds.

The Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA) reported that a dry spell will be experienced in January based on the trend observed by the weather bureau, and rainfall will normalize by June.

Provincial Agriculturist Dr. Romeo Cabungcal assured that the province has a sufficient volume of rice and will not experience shortages for up to 11 months.

Some measures suggested by the PDRRMO include rehabilitation of the water system, protection of water sources, establishment of water impounding, and a campaign for urban planning.

PDRRM Officer Jerry Alili is set to call for a special meeting to discuss the task force with the members of the council.

## PHILIPPINE NEWS AGENCY

# Bukidnon LGU 1st in N. Mindanao to adopt local climate action plan

By: Nef Luczon

The municipality of Kadingilan in Bukidnon province is poised to become a pioneering local government unit (LGU) in creating an Enhanced Local Climate Change Adaptation Plan (ELCCP) in Northern Mindanao region.

In a statement on Friday, Kadingilan Mayor Jerry Canoy Jr. said the LGU's ELCCP includes a greenhouse gas inventory, and identifies indicators for science, technology, and innovation.

The greenhouse gas inventory covers the assessment of the sources and amounts of greenhouse gases emitted within a specific focus area.

Canoy noted that such information is crucial for understanding the local contribution to climate change and developing strategies to reduce emissions in the municipality.

"With the help of our experts, I have great confidence that we can create an Enhanced LCCAP, which is one of our key references in developing and advancing our town," he said.

Dr. Romela Ratilla, director of the Department of Science and Technology in Northern Mindanao, said the agency has the full support of Kadingilan's ELCCP in embracing science, technology, and innovation in the local development plan.

"The Kadingilan LGU is the first municipality in the region with which we have partnered in planning — all while mainstreaming science, technology, and innovation," she said.

The ELCCAP serves as a blueprint for disaster prevention and mitigation in adapting to climate change. It incorporates the latest advancements in science and technology offered by DOST.

# Pangasinan environment office encourages use of e-vehicles

By: Hilda Austria

The Community Environment and Natural Resources Office (Cenro) in Central Pangasinan is supporting the use of electric vehicles as it promotes clean energy for better air quality.

Cenro ecosystem management officer Ma Angelica Esteban, during the launching of the e-vehicle charging station at SM Center Mall here on Saturday, said zero-tailpipe emission vehicles help improve air quality.

In 2022, the Philippines ranked 69th with most polluted air out of 131 countries, according to the World Air Quality Report by Swiss air quality technology company IQAir.

The same report said Taguig was the country's most polluted city.

"Because of this, under the administration of President Ferdinand Marcos Jr. as emphasized in his second State of the Nation Address, we remain committed to global decarbonization goals and the redirection of our carbon footprint by shifting from fossil fuels to renewable energy sources," Esteban said in her speech.

She cited an analysis made during the pandemic that the daily global carbon emissions decreased by 17 percent and the population weighted concentration of greenhouse gas emissions reduced by 60 percent as transportation was halted and most people opted to either walk or go biking.

"The significant data encouraged vehicle companies around the world to promote evehicles as key technology to curb oil use and combat climate change," Esteban said.

She added that with e-vehicles going mainstream, the presence of charging stations benefits owners and encourages the use of this clean energy technology.

SM Center Dagupan mall manager Eileen Delos Santos vowed the management's commitment to support the efforts of the government for cleaner air quality and climate change mitigation.

The charging stations are open for free to e-vehicle owners from 10 am. to 9 p.m. daily.

It is the second mall in Pangasinan that has e-vehicle charging stations. The other one is in Urdaneta City.

## PTV

# Climate change at forefront of PH-Germany cooperation

By: Brian Jules Campued

Germany's Federal Minister for Foreign Affairs Annalena Baerbock has expressed interest in tackling climate change mitigation, particularly setting up a loss and damage fund with the Philippines during a meeting with President Ferdinand R. Marcos Jr. in Malacañang on Thursday, Jan. 12.

"This is also something which we believe can be a next step in our cooperation on the climate issue, even mentioning the loss and damage fund. This is really dear to my heart because I was doing a lot of policy beforehand. We said we have to do something about loss and damage," the German foreign minister said during the meeting.

Baerbock cited German companies' intent to invest in the Philippine renewable energy sector which can further strengthen bilateral relations between the two countries.

This will open discussions on raw materials and skilled labor, Baerbock added.

"I think this is really a field where it's a win-win situation, or even a triple win situation for employees, for workers, also for our countries, and therefore we are looking forward to it," she said.

President Marcos likewise thanked Germany for cooperating with the Philippines, stressing that Germany has been a "vital partner" in addressing climate change due to its introduction of important technologies to the country.

"Thank you very much for the assistance. And I hope that you will be able to support us in our efforts to bring the assessments of those different issues to the Philippines," the chief executive told the German official

Department of Environment and Natural Resources Secretary Maria Antonia Yulo-Loyzaga said last month that the country would call the member-nations of the Loss and Damage Board to address biodiversity destruction and species loss, especially in vulnerable countries.

Pledges for the Loss and Damage Fund reached \$792 million as of December 2023, exceeding the initial expectation of \$200 million.

Baerbock is the first German foreign minister to visit the country after more than a decade. This is part of her visit to the Middle East and Southeast Asia.

#### THE PHILIPPINE STAR

# Global warming pushes ocean temperatures off the charts — study

In 2023, the world's oceans took up an enormous amount of excess heat, enough to "boil away billions of Olympic-sized swimming pools," according to an annual report published Thursday.

Oceans cover 70 percent of the planet and have kept the Earth's surface livable by absorbing 90 percent of the excess heat produced by the carbon pollution from human activity since the dawn of the industrial age.

In 2023, the oceans soaked up around 9 to 15 zettajoules more than in 2022, according to the respective estimates from the US National Oceanic and Atmospheric Administration (NOAA) and the Chinese Institute of Atmospheric Physics (IAP).

One zettajoule of energy is roughly equivalent to ten times the electricity generated worldwide in a year.

"Annually the entire globe consumes around half a zettajoule of energy to fuel our economies", according to statement.

"Another way to think about this is 15 zettajoules is enough energy to boil away 2.3 billion Olympic-sized swimming pools."

In 2023, sea surface temperature and the energy stored in the upper 2000 metres of the ocean both reached record highs, according to the study published in the journal Advances in Atmospheric Sciences.

The amount of energy stored in the oceans is a key indicator of global warming because it is less affected by natural climate variability than sea surface temperature.

Some of the colossal amounts of energy stored in the ocean helped make 2023, a year rife with heatwaves, droughts and wildfires, the hottest on record.

That's because the warmer the oceans gets, the more heat and moisture enters the atmosphere. This leads to increasingly erratic weather, like fierce winds and powerful rain.

Warmer sea surface temperatures are driven mostly by global warming, caused mainly by the burning of fossil fuels.

Every few years, a naturally occurring weather phenomenon, El Nino, warms the sea surface in the southern Pacific, leading to hotter weather globally. The current El Nino is expected to peak in 2024.

Conversely, a mirror phenomenon called La Nina periodically helps cool the surface of the ocean.

Increasing water temperatures and ocean salinity -- also at an all-time high -- directly contribute to a process of "stratification", where water separates into layers that no longer mix.

This has wide-ranging implications because it affects the exchange of heat, oxygen and carbon between the ocean and atmosphere, with effects including a loss of oxygen in the ocean.

Scientists are also concerned about the long-term capacity of the oceans to continue absorbing 90 percent of the excess heat from human activity.

=END=