



NEWS ROUNDUP

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By: Benjamin Legendre

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By: Revin Mikhael D. Ochave

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RAPPLER

[Gov't eyes fuel cells as greener energy alternative to fossil fuels](#)

By: Iya Gozum

Amid energy security issues and the threat of climate crisis, the Philippine government seeks to pioneer research and development of fuel cell technology in the country as a greener energy alternative to fossil fuels.

[June was world's hottest on record, EU scientists say](#)

Last month was the hottest June globally on record, with abnormally high temperatures recorded on both land and sea, the European Union's Copernicus Climate Change Service said on Thursday, July 6.

CCC IN THE NEWS:

PHILIPPINE NEWS AGENCY

[CCC sees new opportunities for strengthened int'l cooperation](#)

By: Ruth Abbey Gita Carlos

The Climate Change Commission (CCC) on Wednesday expressed its commitment to advance the Philippines' interest in strengthening climate cooperation with the international community.

[CCC wants global cooperation for 'transformative' climate action](#)

By: Ruth Abbey Gita Carlos

The Climate Change Commission (CCC) is pushing for stronger global cooperation to ensure the implementation of a "meaningful and transformative" climate action.

Information and Knowledge Management Division

ABS CBN

[Climate change, El Nino drive hottest June on record](#)

By: Benjamin Legendre

The world saw its hottest June on record last month, the EU's climate monitoring service said Thursday, as climate change and the El Nino weather pattern looked likely to drive another scorching northern summer.

The EU monitor Copernicus also said preliminary data showed Tuesday was the hottest day ever recorded -- beating the record set only the day before.

It's the latest in a series of records halfway through a year that has already seen a drought in Spain and fierce heat waves in China as well the United States.

"The month was the warmest June globally at just over 0.5 degrees Celsius above the 1991-2020 average, exceeding June 2019 -- the previous record -- by a substantial margin," the EU monitor said in a statement from its C3S climate unit.

Temperatures reached June records across northwest Europe while parts of Canada, the United States, Mexico, Asia and eastern Australia "were significantly warmer than normal", Copernicus noted.

On the other hand, it was cooler than normal in western Australia, the western United States and western Russia, it said.

'HOTTEST DAY EVER'

The tumbling records reflect the impact of global warming driven by greenhouse gases released from human activity.

Copernicus told AFP preliminary data showed a global average temperature of 17.03 C on Tuesday, beating another record of 16.88 C already set on Monday.

For June, Copernicus noted that sea surface temperatures were higher globally than any previous June on record, with "extreme marine heat waves" around Ireland, Britain and the Baltic.

Antarctic sea ice reached its lowest extent for June since satellite observations began, at 17 percent below average.

C3S scientist Julien Nicolas told AFP the June record was driven largely by "very warm ocean surface temperatures" in the Pacific and Atlantic due to El Nino, a periodic warming phenomenon.

Marine heatwaves struck the Atlantic and low winds meant the warm surface did not mix with colder water deeper down.

"On top of that is this warming trend of the ocean absorbing 90 percent of heat released by human activity," he added.

The global temperature was 0.53 C above the 30-year average at an average of 16.51C (61.72 degrees Fahrenheit), he calculated.

"June 2023 is way above the others. This is the kind of anomaly we are not used to," Nicolas said.

Petteri Taalas, secretary-general of the UN's World Meteorological Organization, warned on Monday that El Nino "will greatly increase the likelihood of breaking temperature records and triggering more extreme heat in many parts of the world and in the ocean."

He urged governments "to mobilize preparations to limit the impacts on our health, our ecosystems and our economies."

DEADLY HEAT WAVES

El Nino is a naturally occurring pattern that drives increased heat worldwide, as well as drought in some parts of the world and heavy rains elsewhere.

In addition, human activity — mainly the burning of fossil fuels — emits roughly 40 billion tonnes of planet-warming CO2 into the atmosphere every year.

As well as withering crops, melting glaciers and raising the risk of wildfires, higher-than-normal temperatures also cause health problems ranging from heatstroke and dehydration to cardiovascular stress.

In the United States, local officials said last week that at least 13 people died from an extreme heatwave in Texas and Louisiana.

China issued its highest-level heat alert for northern parts of the country as Beijing baked in temperatures around 40 degrees Celsius.

After a record-hot June in Britain, water use restrictions were imposed in parts of southeastern England, and Scotland put regions on water scarcity alert.

The world has warmed an average of nearly 1.2 C since the mid-1800s, unleashing extreme weather including more intense heatwaves, more severe droughts in some areas and storms made fiercer by rising seas.

AL JAZEERA

[‘Never just the heat’: Signals of climate distress on the rise](#)

As a warming Earth simmered into worrisome new territory this week, scientists said the unofficial records being set for average planetary temperature were a clear sign of how pollutants released by humans are warming their environment. But the heat is also just one way the planet is telling us something is gravely wrong, they said.

“Heat sets the pace of our climate in so many ways ... it’s never just the heat,” Kim Cobb, a climate scientist at Brown University, told The Associated Press news agency.

Dying coral reefs, more intense nor’easters and the wildfire smoke that has choked much of North America this year are among the many other signals of climate distress.

“The increasing heating of our planet caused by fossil fuel use is not unexpected, but it is dangerous for us humans and for the ecosystems we depend on. We need to stop it, fast,” said Stefan Rahmstorf of the Potsdam Institute for Climate Impact Research.

Some other recent “firsts” and events that indicate climate change has entered uncharted territory:

Ocean warming

Most of the planet is covered by oceans, which have absorbed 90 percent of the recent warming caused by planet-warming gases, such as carbon dioxide and methane. In April, global ocean temperature soared to 21.1C (69.98F), which was attributed to the combination of greenhouse gas emissions and the early El Nino formation. Newly published data from the Copernicus Climate Change Service documented “exceptionally warm” ocean temperatures in the North Atlantic with “extreme” marine heat waves near Ireland, the UK and in the Baltic Sea.

Wildfire smoke

Several rounds of wildfire smoke, originating from northern Canada, brought dangerous air quality levels to eastern North America. The high levels of wildfire smoke have become familiar on the West Coast, but scientists have said that climate change will make wildfires and smoke both more likely and more intense, and that the East Coast will see more of it.

El Nino arrives early

The current El Nino – a period of warming Pacific Ocean waters – formed a month or two earlier than usual, replacing a La Nina that, with its cooling of Pacific waters, served as a damper on global temperatures. That means it will have more time than usual to strengthen. The World Meteorological Organization predicts there is a 98 percent chance that at least one of the next five years will be the warmest on record, beating 2016 when an exceptionally strong El Nino was present.

Shrinking Antarctic sea ice

Scientists are watching Antarctic sea ice shrink to record lows. The 11.7 million square kilometres (4.5 million square miles) covered by the sheet on June 27 was almost 2.6 million square kilometres (one million square miles) less than average for that date for the period from 1981-2010, according to the National Snow and Ice Data Center.

Put another way, an area nearly four times the size of the US state of Texas was gone from the ice sheet.

BUSINESS WORLD

PHL trade delegation targets German infra, RE investment

By: Revin Mikhael D. Ochave

GERMAN infrastructure, renewable energy (RE), and high-tech manufacturing companies are among the potential investors that a trade delegation currently in Europe is seeking to attract to the Philippines, the Department of Trade and Industry (DTI) said.

In a speech at the Philippine-German Investment Forum on July 3, Trade Secretary Alfredo E. Pascual directed his remarks specifically to infrastructure companies in light of the Philippine government's push to address the gaps in its infrastructure.

"We enjoin Germany to partner with the Philippines in projects involving the construction of airports, railways, and bridges, all designed to enhance connectivity within our country and with the rest of the world," Mr. Pascual said.

The forum was attended by representatives from the German Federal Ministry for Economic Affairs and Climate Action State Secretary Udo Philipp, Philippine Ambassador to Germany Irene Susan B. Natividad, Association of German Chambers of Commerce, and Industry Chief Executive of Foreign Trade Volker Treier, as well as representatives from German companies.

Mr. Pascual added that German businesses might find opportunity in the Philippine renewable energy industry, where foreign investors are now allowed to own 100% of their projects, up from the Constitutional limit of 40% previously.

Mr. Pascual also urged German businesses to consider locating high-tech manufacturing operations to the Philippines, including aerospace, automotive, electronic devices, pharmaceuticals, and innovation-focused sectors.

Mr. Pascual also had a separate meeting with German Electronics and Digital Industry Association (ZVEI) President Gunther Kegel on possible collaboration in electronics manufacturing with the Semiconductor and Electronics Industries in the Philippines Foundation, Inc.

The specific businesses being targeted are original design manufacturer, original equipment manufacturer, and electronics manufacturing outsourcing in the Philippines.

"This is in light of the continuing challenges of the lack of skilled labor, the rising cost of production, and the diversification and de-risking aspirations in Germany," the DTI said.

ZVEI represents over 1,000 companies in Germany employing 879,000 workers, with combined turnover of €200 billion in 2021.

The Philippine Statistics Authority reported that Germany was the top source of foreign investment pledges at P156.96 billion in the first quarter, accounting for 90.9% of the total.

The DTI European Investment Roadshow wrapped up yesterday, July 6.

MANILA BULLETIN

[DOE eyes more domestic power sources](#)

By: Freddie Lazaro

Energy Secretary Raphael Lotilla said Wednesday that the Department of Energy is seeking to develop more domestic sources of power as alternatives to achieve energy security in the country.

Although the existing renewable energy sources in the country like the wind farms in Ilocos Norte and solar farms contributed a meager percentage in the energy mix, Lotilla said these domestic power sources have great potentials to develop to sustain the energy demand generation.

Speaking during the Pandesal Forum at the Kamuning Bakery Cafe in Quezon City, Lotilla said collaboration among the government, the private sector, and consumers is necessary in attaining the aggregate goal of energy security.

“We need to develop more of our indigenous energy resources including the renewable energy sources. Our push for renewable energy is not just being pushed by the sustainability side or because of pressures from the international community. It is because the Philippines has not been as gifted with fossil fuels...(but) fortunately for us, on the renewable side, we have more of those resources,” he said.

Lotilla revealed that additional energy supply is expected from the Malampaya gas field, the country’s only indigenous commercial source of natural gas, west of Palawan in two years.

“We are on track to having the drilling for the nearby fields by the end of 2024, and we are looking forward to new additional supply from the same service contract by 2026. This good news is important in terms of encouraging more investments in exploration in the oil and gas sector,” he said.

“The importance of natural gas to the country is that it is going to provide a backup for the uncertainties, for instance, in the supply of renewables. By nature, solar and wind are intermittent...When there are clouds above, then the solar panels do not work to their highest efficiency. When the winds are neither ‘amihan’ nor ‘habagat,’ then wind power will always be volatile. Therefore, we need natural gas to complement or to make up for those volatilities,” the Energy Secretary added.

In line with the agenda of President Marcos of looking possible areas for the installation of renewable energy sources without sacrificing agricultural lands, he said that they are exploring the installation of floating solar panels and offshore wind farms in the country.

He said that they are promoting the use of renewable energy storage system during the peak period of production for use during night time.

On the development of nuclear energy, Lotilla said that the country will be on track within the decade to pursue this option but noted that, as of the moment, most of the smaller modular technologies are still in the demonstration stage and not yet on commercial scale and are, hence, more expensive.

“It all depends on timing and pricing. We are working with the National Economic and Development Authority (NEDA) to work on a framework for private sector participation in the nuclear power space,” he said.

Lotilla said that legislators are working to come out with new bill regarding Philippine nuclear development.

“Under EPIRA, the government is prohibited from entering into the generation space. But if there is a possibility or potential for the private sector to do it, then we should by all means encourage the private sector to do so,” he said.

On the critical role of the generation, transmission, and distribution sectors in the power system, Lotilla said that the government will focus on necessary reforms like amending the secondary price cap and encouraging more competition in generation, finishing much-needed transmission lines to complement the growth of more generation technologies, and ensuring that distribution utilities are run more efficiently.

For the meantime, Lotilla called on consumers to exercise electricity conservation, especially during peak hours, to help manage the thin supply margins.

ONE NEWS PH

[Earth Scorches For 3rd Straight Day; Manila Heat Index Hits 37°C](#)

More frequent and more intense heat waves are disrupting life around the world and causing life-threatening temperatures.

Sweltering heat is blanketing much of the planet, and the past seven days have been the hottest week on record, the latest grim milestone in a series of climate-change-driven extremes.

Earth's average temperature on Wednesday, July 5, remained at an unofficial record high set the day before. And for the seven-day period ending Wednesday, the daily average temperature was .08 degrees Fahrenheit (.04 degrees Celsius) higher than any week in 44 years of record-keeping, according to data from the University of Maine's Climate Reanalyzer, a tool that uses satellite data and computer simulations to measure the world's condition.

The average global temperature for Tuesday, July 4, and Wednesday was 62.9 degrees Fahrenheit (17.18 degrees Celsius). That follows a short-lived record set Monday, at 62.6 degrees Fahrenheit (17.01 Celsius). The Climate Reanalyzer figures are unofficial but significant data, and an indication that climate change is reaching uncharted territory.

"The situation we are witnessing now is the demonstration that climate change is out of control," United Nations Secretary General Antonio Guterres said. "If we persist in delaying key measures that are needed, I think we are moving into a catastrophic situation, as the last two records in temperature demonstrates."

More frequent and more intense heat waves are disrupting life around the world and causing life-threatening temperatures.

In Timbuktu, Mali – at the gateway to the Sahara Desert – 50-year-old Fatoumata Arby said this kind of heat is new. "Usually, at night it's a bit cool even during the hot season. But this year, even at night, it's been hot – I've never seen anything like it," said Arby, who rarely leaves her hometown. "I've been having heart palpitations because of the heat. I'm starting to think seriously that I'm going to leave Timbuktu."

Last week, Egypt experienced one of its many summer heatwaves, with temperatures soaring above 100 degrees Fahrenheit (37.7 degrees Celsius), according to the country's national weather forecaster. To combat heat and humidity, children on Thursday, July 6, frolicked in the Nile River while pedestrians hunted the shade.

People are also feeling the effects in Nouakchot, Mauritania's capital city, on the shores of the Atlantic. For Abdallahi Sy, a 56-year-old farmer who works in the market gardens, environmental changes have reduced his already-meager income.

"I have a small shelter built from wooden poles and scraps of cloth. I take refuge there when the heat becomes unbearable," said Sy, who tries to work from 6 a.m. to 11 a.m., or noon at the latest. "After that ... I practically can't move because of the heat." Customers don't venture out until 5 p.m. or later to buy fertilizer and vegetables.

He cited a scarcity of water and quality feed for livestock as causes for illness and even miscarriage among animals: "It is clear that we are facing profound changes in our environment. The earth is becoming less fertile and less generous."

Overall, one of the largest contributors to this week's heat records is an exceptionally mild winter in the Antarctic. Parts of the continent and nearby ocean were 18-36 degrees Fahrenheit (10-20 degrees Celsius) higher than averages from 1979 to 2000.

"Temperatures have been unusual over the ocean and especially around the Antarctic this week, because wind fronts over the Southern Ocean are strong pushing warm air deeper south," said Raghu Murtugudde, professor of atmospheric, oceanic and earth system science at the University of Maryland and visiting faculty at the Indian Institute of Technology, Bombay.

"Warming climates might lead to increasing risks of diseases such as the avian flu spreading in the Antarctic that will have devastating consequences for penguins and other fauna in the region," Vijayaraghavan said.

Katharine Hayhoe, The Nature Conservancy chief scientist and a climate scientist at Texas Tech, said: "This is one more reminder of the inexorable upward trend that will only be halted by decisive actions to wean ourselves off fossil fuels, invest in nature, and achieve net zero."

Hottest day

Meanwhile, in Metro Manila, the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) recorded the hottest day so far for the month of July also on Wednesday.

PAGASA said that a sweltering 37 degrees Celsius was recorded at Port Area in Manila. This is just 0.5 degrees lower than the highest recorded temperatures in Metro Manila for July.

For this year, the hottest recorded so far in the Philippines was recorded in Isu, Echague in Isabela when temperatures reached 39.0 degrees Celsius last May 7.

Scientists have warned for months that 2023 could see record heat as human-caused climate change, driven largely by the burning of fossil fuels like coal, natural gas and oil, warmed the atmosphere. They also noted that La Niña, the natural cooling of the ocean that had acted as a counter to that warming, was giving way to El Niño, the reverse phenomenon marked by warming oceans. The North Atlantic has seen record warmth this year.

“A record like this is another piece of evidence for the now massively supported proposition that global warming is pushing us into a hotter future,” said Stanford University climate scientist Chris Field, who was not part of the calculations.

University of Maine climate scientist Sean Birkle, creator of the Climate Reanalyzer, said the daily figures are unofficial but a useful snapshot of what’s happening in a warming world.

While the figures are not an official government record, “this is showing us an indication of where we are right now,” said National Oceanic and Atmospheric Administration chief scientist Sarah Kapnick. And NOAA indicated it will take the figures into consideration for its official record calculations.

Even though the dataset used for the unofficial record goes back only to 1979, Kapnick said that given other data, the world is likely seeing the hottest day in “several hundred years that we’ve experienced.”

Scientists generally use much longer measurements – months, years, decades – to track the Earth’s warming. But the daily highs are an indication that climate change is reaching un-charted territory. Some parts of the world saw extraordinary heat waves.

High-temperature records were surpassed this week in Quebec and Peru. Beijing reported nine straight days last week when the temperature exceeded 35 degrees Celsius (95 degrees Fahrenheit), and ordered a stop to all outdoor work Wednesday as more high temperatures were forecast to pass 40 degrees Celsius (104 degrees Fahrenheit).

That included communities that aren’t used to feeling such heat. In North Grenville, Ontario, the city turned ice hockey rinks into cooling centers as temperatures Wednesday hit 32 degrees Celsius (90 degrees Fahrenheit), with humidity making it making it feel like 38 degrees (100 degrees Fahrenheit).

“I feel like we live in a tropical country right now,” city spokeswoman Jill Sturdy said. “It just kind of hits you. The air is so thick.”

On Wednesday, 38 million Americans were under some kind of heat alert, Kapnick said.

Cities across the US from Medford, Oregon to Tampa, Florida have been hovering at all-time highs, said Zack Taylor, a meteorologist with the National Weather Service.

But according to data from the Climate Reanalyzer, many of the largest temperature anomalies this week were seen over the world’s oceans, especially the Antarctic Ocean.

“Temperatures have been unusual over the ocean and especially around the Antarctic this week, because wind fronts over the Southern Ocean are strong pushing warm air deeper south,” said Raghu Murtugudde, professor of atmospheric, oceanic and earth system science at the University of Maryland and visiting faculty at the Indian Institute of Technology, Bombay.

Murtugudde said that ocean heat is also going deeper. He said, “Oceans take up 93 percent of additional heat we are generating because of increasing greenhouse gases and they are now a huge reservoir of heat.”

Some places experienced unusually cold weather for the time of year, including southeast Australia and much of India.

With many places seeing temperatures near 38 degrees Celsius (100.40 degrees Fahrenheit), an average temperature record of 17.18 Celsius (62.9 degrees Fahrenheit) might not seem very hot. But Tuesday’s global high was nearly a full degree Celsius (1.8 degrees Fahrenheit) higher than the 1979-2000 average, which already topped the 20th- and 19th-century averages.

In Manila, PAGASA said that the Intertropical Convergence Zone (ITCZ) is affecting Southern Mindanao while the easterlies are affecting the eastern sections of Visayas and Mindanao.

The ITCZ will bring scattered rainshowers over Zamboanga peninsula and the southern portion of Palawan.

Easterlies and localized thunderstorms will bring isolated rainshowers over Metro Manila and the rest of the country.

Days after announcing the onset of El Niño, PAGASA warned of possible flash floods or landslides during heavy rains.

PCO

[PBBM paves way for sustainable oil and coal explorations in BARMM to ensure it realizes security and development](#)

The country can ensure energy security by tapping the enormous energy potential within the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) and at the same time, bring positive changes in the lives of the people in the region, President Ferdinand R. Marcos Jr. said on Thursday.

“By harnessing the enormous energy potential within BARMM, we will reduce our reliance on external sources, mitigate the detrimental impacts of price fluctuations, and build a solid foundation for our country’s energy security,” President Marcos said during the ceremonial signing in Malacañang of the Joint Circular Prescribing the Guidelines on the Petroleum Service Contracts (PSCs) and Coal Operating Contracts (COCs) in BARMM.

“Through the responsible and innovative utilization of abundant resources, we are determined to ignite profound and positive changes in the lives of our people, especially our sisters and brothers in the BARMM,” he said.

The President noted, however, that the partnership extends far beyond energy resource development, as he vowed to explore and seize every developmental opportunity that will empower the region’s population and enhance their quality of life.

The guidelines’ release is timely, Marcos said, considering the challenges posed by the depletion of the Malampaya reservoir and volatile fossil fuel prices, which prompt the government to take decisive action to reignite petroleum exploration, and foster the development of indigenous energy resources.

“This collaborative endeavor stands as an unwavering testament to our firm commitment to unity and unwavering cooperation with BARMM as we unlock the vast and untapped potential of the region,” the President stressed.

According to the chief executive, the guidelines’ objectives are clear and resolute, and aimed at facilitating the robust growth of BARMM’s energy sector as well as attract vital investments.

“In fostering a level playing field, we create an environment that encourages local and foreign investors to actively participate in the exploration and development of the BARMM’s energy resources,” Marcos said, adding the guidelines will also promote

economic growth, generate employment opportunities, and nurture businesses in the region.”

The guidelines will also serve as a safeguard in ensuring the strict adherence of all exploration and development activities to rigorous regulations and industry-leading best practices, he said, adding they also demonstrate the government’s commitment to responsible stewardship, ecological sustainability, and the cultivation of a vibrant energy sector.

The Bangsamoro Organic Law empowers both the National and the Bangsamoro government to jointly grant rights, privileges, and concessions for the exploration, development, and utilization of uranium and fossil fuels within the BARMM.

The Oil Exploration and Development Act allows the government to indirectly undertake the exploration and production of the country’s indigenous petroleum resources through PSCs. The Coal Development Act, on the other hand, also allows the government to undertake the exploration, development, and production of the country’s indigenous coal resources through COCs.

Among those who can apply for petroleum ventures are local or foreign individual, company, or group of companies forming a joint venture or consortium, organized, or authorized for the purpose of engaging in exploration and development activities.

For coal, an applicant must be an acknowledged corporation or partnership with at least 60 percent of its capital as Filipino-owned and registered in the Securities and Exchange Commission (SEC), or a cooperative authorized for engaging in coal exploration and development.

PHILIPPINE DAILY INQUIRER

Gov't launches hydrogen fuel cell research center

By: Krixia Subingsubing -

Once dismissed as a scientific hoax in the 1970s, the government has now launched its own research and testing facility in a bid to get up to speed with strides in the development of hydrogen as a source of clean energy.

The Department of Science and Technology (DOST) and the Department of Energy (DOE) officially opened on Thursday the government's first hydrogen fuel cell research and testing center at the DOST compound in Taguig City, where they are currently working on a fuel cell prototype made from local materials.

"Our need for affordable energy will never go away... We are looking to hydrogen as a possible source," said Science Secretary Renato Solidum Jr., who was still in school when Filipinos first heard in the 1970s that a hydrogen isotope, called deuterium, could make the Philippines rich because there is supposedly so much of it in the Philippine Deep.

As it turned out, the development of energy from hydrogen was found to be prohibitively expensive, slowing down research and development (R&D) all over the world, except in Japan. By the 1990s, Japanese carmaker Toyota had unveiled the prototype of the world's first hybrid hydrogen fuel cell vehicle, which was later developed into the Toyota Mirai sedan, the first commercially produced hydrogen vehicle.

At present, the DOST fuel cell team is working on a fuel cell proton exchange membrane that would allow hydrogen protons to pass through while blocking electrons and heavier gases for the fuel cell to generate energy.

Among others, Solidum said scientists from the University of the Philippines and De La Salle University are testing the viability of cotton, coconut and water hyacinth as possible materials.

For sustainable future

"Our goal is to develop a technology that's comparable with other energy sources," said Ronaldo Parreño, senior DOST research specialist and project leader. "Who knows, this can even be our solution to the high costs of electricity."

Parreño told the Inquirer that the project is expected to be completed next year and they hope to test it on electric vehicles or possibly small household electrification.

Solidum said the center's opening signals a "bold step toward a sustainable future" to help address problems in energy security and climate change.

Energy Secretary Raphael Lotilla, who also led the facility's opening, said the point is to start and maintain R&D so we are not left behind again.

"The technology here is not yet that advanced because the costs are really high," Lotilla said.

"What we're doing here is to localize the research, use products that are locally available, so we don't have to import materials that constitute parts of the fuel cell," he said.

The fuel cell development is also crucial to the DOE's renewable energy roadmap, which hopes to reduce the country's reliance on fossil fuels, Lotilla said.

Currently, renewables only constitute 22.8 percent of the country's energy mix, compared to coal at 37.1 percent and oil at 34.6 percent.

RAPPLER

Gov't eyes fuel cells as greener energy alternative to fossil fuels

By: Iya Gozum

Amid energy security issues and the threat of climate crisis, the Philippine government seeks to pioneer research and development of fuel cell technology in the country as a greener energy alternative to fossil fuels.

On Thursday, July 6, the Department of Science and Technology (DOST) and the Department of Energy (DOE) officially opened the Fuel Cell R&D and Testing Center inside the DOST Compound in Bicutan, Taguig City.

The new government research facility is a collaboration between the DOST and DOE, aimed at advancing fuel cells and hydrogen technologies in the country.

Fuel cells work like batteries. But unlike batteries, fuel cells continue to produce energy as long as there is supply of fuel – in this case hydrogen – and oxidant. The electrochemical reaction produced from hydrogen and oxygen's contact is what generates electricity.

Fuel cells are considered cleaner because their byproduct is just water and heat, unlike fossil fuels whose byproduct is carbon dioxide emissions which worsen climate change. Fuel cells do not emit other air pollutants.

For Energy Secretary Raphael Lotilla, the establishment of this research center is a significant step toward the country's goal to make its energy mix cleaner.

By investing in technologies such as fuel cell, "we proactively address the issues of energy security and climate change," said Lotilla.

This technology, if mass produced and already commercially viable, can supply energy for mass transport and energy-intensive industries such as steel production. But it's still a long way to go before the country reaches these situations.

Science Secretary Renato Solidum said that one example of an immediate application of the technology is in far-flung communities with rotational brownouts.

This is the first government facility of its kind, according to Solidum. But the Philippines is only catching up with other countries.

Solidum shared that when he was taking up graduate studies in the United States in the 1990s, they were already developing their fuel cell research. Of course, the US was using materials already readily available to them. With this new DOST facility, Solidum said they aimed to source local materials.

“Yung ginagamit nila doon ‘yung materials na readily available,” said Solidum. “Dito iibahin natin.” (The US used materials readily available to them. Here, we’re going to change that.)

Focus and challenges

Localizing research is one of the main thrusts of the project. And Filipino researchers are looking at waste available at hand.

Currently, the facility is testing cotton linter’s feasibility and durability as material for the membrane of the fuel cell. Other materials for the membrane being studied outside the facility are water hyacinths from the Pasig River and coconuts from Iligan City.

Aside from membrane, the facility is also working on the electrodes which can also be made from existing waste materials. Ronaldo Parreño, project lead in the facility, likened these parts to a sandwich. The membrane goes in the middle of two electrodes. This sandwich, or the membrane-electrode assembly, is considered the main component of the fuel cell that facilitates the generation of the electricity.

The project has a timeline of three years. The building costs P11 million. The DOE gave P35 million for the research center. The team, headed by Parreño – senior science research specialist in the DOST – targets to release a prototype of the design of the fuel cell stack by the end of 2024.

But fuel cell technology, while the cleaner energy option compared to fossil fuels, has its own challenges. Lotilla named a few: cost, durability, and sustainability.

According to the US Department of Energy, what makes the technology expensive is not the materials used but the manufacturing of the fuel cell stack. Building and maintaining hydrogen stations also cost a lot and would need to decrease for a hydrogen economy to thrive.

Since the technology is only in its early stages in the Philippines, early impacts would be hard to see.

But Solidum has big hopes in the facility, especially its impact on local researchers, the opportunities it will open for entrepreneurs, and what it promises for the future.

Beyond the science, Solidum said the center “will foster innovation and economic growth by providing a platform for local researchers and entrepreneurs to develop their ideas and bring them to the market.”

“That’s the most important thing: ideas brought to the market,” the science secretary said.

June was world's hottest on record, EU scientists say

Last month was the hottest June globally on record, with abnormally high temperatures recorded on both land and sea, the European Union's Copernicus Climate Change Service said on Thursday, July 6.

Last month smashed through the previous temperature record for the month of June – which was in 2019 – by a substantial margin, Copernicus said.

Globally, June was just over 0.5C above the average temperature for the same month in 1991-2020, Copernicus said, as climate change pushes global temperatures to new records and short-term weather patterns also drive temperature movements.

Above-average temperatures swept through countries including India, Iran, Canada, while extreme heat in Mexico last month caused more than 100 deaths and Beijing recorded its hottest June day.

Scientists have said climate change combined with the emergence this year of the El Nino weather pattern, which warms the surface waters in the eastern and central Pacific Ocean, have fuelled recent record-breaking temperatures.

“This record is no surprise and a testament of climate change progressing at a worrying pace,” said Joeri Rogelj, a professor of climate science at Imperial College London's Grantham Institute.

“As the amplifying El Nino phenomenon develops further over the coming months, it is not unexpected to see more global temperature records broken,” he said.

On Tuesday the world recorded its hottest day on record, surpassing a record set just a day before on Monday, according to Copernicus data, as North Africa, China and other regions sizzle under heatwaves.

Global sea temperature also rose to a new record for the month of June, with extreme marine heatwaves recorded around Ireland, the United Kingdom and the Baltic Sea, Copernicus said. The body's analysis is based on billions of measurements from satellites, ships, aircraft and weather stations.

Antarctic sea ice fell in June to its lowest extent for the month in the satellite record, at 17% below average, Copernicus said.

CCC IN THE NEWS:

PHILIPPINE NEWS AGENCY

[CCC sees new opportunities for strengthened int'l cooperation](#)

By: Ruth Abbey Gita Carlos

The Climate Change Commission (CCC) on Wednesday expressed its commitment to advance the Philippines' interest in strengthening climate cooperation with the international community.

This, as CCC welcomed the election of its vice chairperson and executive director, Secretary Robert Borje, as co-chairperson of the Organisation for Economic Co-operation and Development (OECD)'s Inclusive Forum on Carbon Mitigation Approaches (IFCMA).

"Serving as co-chair presents new opportunities to further strengthen international cooperation in climate action between developing and developed nations," the CCC said in a statement Wednesday night.

The CCC said the Philippines' co-chairmanship of IFCMA is vital in establishing enabling policy environment towards improved access to technology development, as well as to the transfer, capacity-building and finance and investments as regards carbon mitigation approaches.

As co-chair, the CCC vowed to make sure that the OECD's forum will facilitate "practicable and pragmatic" partnerships to hasten the implementation of higher impact and cost-effective climate change mitigation actions.

The CCC added that the Philippines' role will further promote complementation with the existing work of international bodies, including the United Nations Framework Convention on Climate Change (UN Climate Change) and its Paris Agreement.

It said it will continue to involve more government agencies and stakeholders in the IFCMA work as part of "one-country-team" approach to address climate change and its impacts.

It stressed that closer cooperation with concerned government agencies and stakeholders would enable the Marcos administration attain its "low-carbon, climate-resilient, and sustainable" development goal for the Philippines.

The IFCMA, which will run from 2023 to 2025, is an initiative that aims to assess the impacts of national mitigation interventions on global greenhouse gas emissions.

Borje will be joined by two other co-chairs, Switzerland's Martin Baur and Chile's Maria Jose Garcia.

The three co-chairs will serve for a period of three years from 2023 to 2025. Each of them will act as Steering Group Chair for a year, with the Philippines' term to begin in 2024.

In the IFCMA Steering Group, the Asia-Pacific is represented by the Philippines, Japan, and Singapore. The Philippines is the only middle-income nation in the steering body.

"The CCC appreciates the vote of confidence and support by the OECD and IFCMA members," the commission said.

"The election is a demonstration of the continued and growing recognition of the Philippine Government under President Ferdinand R. Marcos Jr.'s commitment and capability as a meaningful and constructive partner for transformative climate change action," it added.

Currently, the Philippines is one of the IFCMA's project associates and a pilot country candidate, expected to provide data on climate change mitigation-related policies, programs, and projects, and in turn, benefit and learn from a range of carbon mitigation approaches from various countries in different regions.

[CCC wants global cooperation for ‘transformative’ climate action](#)

By: Ruth Abbey Gita Carlos

The Climate Change Commission (CCC) is pushing for stronger global cooperation to ensure the implementation of a “meaningful and transformative” climate action.

This was after CCC vice chairperson and executive director Robert Borje met with the incoming 28th Conference of the Parties (COP28) president Sultan Ahmed Al Jaber in Bonn, Germany to discuss areas of cooperation for the advancement and acceleration of worldwide climate action for the global south.

In a statement on Thursday, the CCC said the meeting focused on critical pillars of mitigation, adaptation, loss and damage, and means of implementation and support.

“To advance global climate action in view of national circumstances, Secretary Borje raised the importance of partnerships on technology development and transfer, finance and investments, capacity building, and other areas that may be explored including communication, education and awareness, and research and development projects,” the CCC said.

“Sharing the same vision, Secretary Borje and COP28 President Al Jaber are committed to work together towards a transformative, scaled-up and integrated South-South Cooperation, in the lead up to COP28 and even beyond,” it added.

The COP28 to the United Nations Framework Convention on Climate Change (UNFCCC) will be hosted by Dubai, United Arab Emirates (UAE) from Nov. 30 to Dec. 12 this year.

The CCC hoped that the partnership with the UAE and other UNFCCC Parties will contribute to “stronger global cooperation towards meaningful and transformative climate action.”

“For the Philippines, the bilateral partnership presents new pathways of cooperation towards accelerated just transition and greenhouse gas emissions avoidance, and introduction of new and appropriate technology and innovation,” it said.

‘Investment-led, transformative’ climate actions

The CCC also vowed to advance enabling policies for the implementation of “investment-led and transformative” climate actions in the country.

During the high-level dialogue on financing climate action organized by the Asian Development Bank (ADB) on June 23, CCC Commissioner Rachel Anne Herrera presented three major areas of collaboration, including the need to formulate and institutionalize “forward-looking, innovative, and transformative” climate policies that are anchored on the “best available science and indigenous and local knowledge”.

“Grounded on our joint efforts with national government agencies and other stakeholders, we are committed to advancing enabling policies for investment-led and transformative climate actions,” she said.

“The times call for a strong mechanism to mobilize resources, and formulate strategies, to be implemented at the pace and scale needed,” Herrera added.

Herrera also expressed her appreciation for the ADB's sustained support for the Philippine government by mobilizing USD3.9 billion in climate finance between 2018 and 2022 under the Country Partnership Strategy (CPS).

She said the CCC is committed to sustained collaboration with the ADB, acknowledging that the financial institution’s support has been instrumental in the development of a comprehensive policy program that accelerates the formulation and implementation of the Philippine Nationally Determined Contribution, National Adaptation Plan, and Long-Term Strategy for greenhouse gas emission reduction pathways.

Herrera added that the ADB’s support has also facilitated flagship mitigation investments in low-carbon transport and key adaptation programs, particularly in flood risk management.

She called for support to enhance national and local governments’ access to resources to develop fit-for-purpose interventions, especially for adaptation.

She also urged the Philippines’ partners to develop common indicators for monitoring and evaluating climate change actions that will assess progress and unlock private sector investments.

Climate change as human rights issue

In a separate statement, CCC Commissioner Albert dela Cruz Sr. stressed the need for the immediate implementation of mitigation and adaptation measures to fight climate change, saying the phenomenon is not only an issue of environmental risks and crises but also a “human rights issue.”

Dela Cruz, citing the scientists' warning, warned that humanity is approaching the limits of 'survivability' due to sweltering heat waves.

Based on United Nations' data, over 828 million people faced hunger in 2021.

Studies have also projected that climate change will add up to more than 80 million more people at risk of hunger by the middle of this century.

"Our environment is slowly being destroyed. It is burning while our planet's polar caps are melting. There will be massive flooding but our world is drying up, too. The truth is that our home is dying," Dela Cruz said.

Dela Cruz reminded the public that each person has an important role in protecting and preserving the environment, adding that they may take advantage of the "most powerful technological tools" to address climate change.

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