

# NaturLoop turns coco waste into wood panels

By Edg Adrian A. Eva  
Reporter

NATURLOOP, a Swiss-based material science startup with deep Filipino links, is turning coconut husk waste from the Philippines into sustainable wood panels, offering a lower-carbon alternative to conventional building materials while addressing deforestation and agricultural waste.

Founded in 2014 at Bern University of Applied Sciences by faculty members and graduate students, NaturLoop was built around the idea of converting agricultural byproducts into construction materials that reduce greenhouse gas emissions.

Its flagship product, Cocoboard, is the first commercial result of that research, according to Filipino entrepreneur

Charmaine Cu-Unjieng, who is co-founder and chief strategy officer at NaturLoop.

The product arrives as pressure intensifies on the global construction sector, which accounted for 37% of global greenhouse gas emissions in 2023, according to the United Nations Environment Programme.

NaturLoop positions Cocoboard as an emission-reducing alternative that also creates value from waste streams in coconut-producing countries.

Cocoboard is made of 90% coconut husks and 10% bio-based resin, derived largely from tannin, a naturally occurring compound found in plants. Coconut husks were selected for their strong natural fibers, which can replace wood fibers used in conventional panels.

"We use these to make panels that are completely circular and

sustainable," Ms. Unjieng told *BusinessWorld* in a Microsoft Teams interview. "This can be used for furniture and interior architecture."

Although NaturLoop is headquartered in Switzerland, much of its development and sourcing is rooted in the Philippines.

Cocoboard was developed in partnership with Filipino researchers, universities and organizations, including the Philippine Coconut Authority. The company works with local supply partners in Quezon province, Zamboanga and Agusan del Norte, where its processing plant is also located.

The Philippines is the world's second-biggest coconut producer after Indonesia, making it a natural base for NaturLoop's raw materials. Ms. Unjieng said the country generates about 15 billion coconut husks each year, most of which are treated as

waste or burned, releasing carbon into the atmosphere.

"That translates to around 80 million 4x8 Cocoboard panels that can be produced from available raw materials," she said, assuming 222 factories operating around the clock. "Instead, we burn this waste and import wood panels when we could be producing what we need from waste materials."

Cocoboard is designed to match the performance of medium-density fiberboard (MDF), commonly used for furniture, cabinetry and interior finishes.

Based on NaturLoop's internal estimates, Cocoboard can be produced with up to 70% lower carbon emissions than standard MDF and about 30% lower emissions than colored MDF.

"Regardless of the parameters used, emissions are reduced because no trees are felled," Ms. Un-

jieng said. She added that turning coconut waste into panels locks in carbon that would otherwise be released during decomposition or burning.

The panels use renewable, biodegradable adhesives rather than synthetic binders derived from fossil fuels. Production also requires less energy, as coconut husks already contain naturally formed fibers, eliminating several processing steps used for wood products.

Cocoboard meets European Union fire safety standards, with low smoke production and no flaming droplets, according to the company. It is also termite-resistant and more moisture-resistant than conventional MDF, though protective coatings are recommended for outdoor use.

Each panel measures 2,440 x 1,220 x 12 millimeters, using the equivalent of about 100 coconuts. NaturLoop used eight to 20 tons

of dried coconut fiber and pith annually and plans to raise this to 20 to 50 tons within the year.

Ms. Unjieng said Filipinos stand to benefit most if more processing happens locally.

NaturLoop is seeking investors to build a Philippine-based manufacturing facility to convert husks directly into finished panels. At present, some materials still need to be shipped to Europe for processing, raising costs amid expensive fuel and slower global shipping.

She cited the lack of local processing infrastructure, the need for strategic partners and limited market research as hurdles.

Government investment in research, funding coordination and market development could boost the country's coconut sector and position Philippine-made sustainable materials on the global stage, she added.

## Startup Orderly pitches AI ordering tool to restaurants to cut labor costs

By Almira Louise S. Martinez  
Reporter

ORDERLY, an artificial intelligence (AI) voice-ordering system, is helping restaurants streamline order-taking by replacing traditional counter transactions with automated voice agents, a shift the startup says can cut labor costs and lift sales.

The system lets customers place orders by speaking to an AI agent, reducing the need for staff to manually take orders.

Orderly AI co-founder and Chief Executive Officer Math Z. Heramia said the

idea grew from his family's experience running restaurants in the Philippines and the difficulties of managing workers.

"We wanted to use AI to build a solution within restaurants and to solve ordering, which was like the biggest pain point," Mr. Heramia told *BusinessWorld* in a Zoom interview.

Mr. Heramia, 21, is a Filipino-American based in the US and comes from a family of restaurateurs who, he said, faced recurring staffing issues.

"What we saw in the Philippine market is they're facing the same thing as the US and the rest of the world, having to deal with labor," he said.

Waiters in the Philippines earn an average base salary of P15,956 a month, according to job platform Indeed. Orderly estimates that mid-sized restaurants using its system can save more than P380,000 a year in labor costs while increasing average order value by as much as 38%.

"Instead of having five wait staff, you could maybe half that or replace two," Mr. Heramia said. He added that the AI could also suggest add-ons and upgrades during ordering.

"We're able to understand what the consumer wants at a very high level and down to the details," he said.

Customers access the system by scanning a quick response code and choosing

between a digital menu, chat interface or AI voice agent. Orders are sent directly into a restaurant's point-of-sale system (POS), reducing error rates and preparation time.

"If you already have a POS system, we can integrate and run as a layer on top of what you have," Mr. Heramia said, adding that setup requires little effort from restaurant owners.

The voice agent supports Filipino and English, with plans to expand coverage as the company gathers linguistic data.

"We would have to capture more speech data and train models to interact with customers across dialects," Mr. Heramia said.

While automation reduces demand for frontline staff, Mr. Heramia said the lower operating cost could help displaced workers start businesses of their own. "Those people who may have lost that job could open their own restaurant now because it becomes much cheaper," he said.

About 12.7 million jobs in the Philippines are exposed to generative AI, though only 3.6% face a high risk of displacement, according to data from the International Labour Organization.

Orderly aims to work with 500 local businesses and expand to 2,500 restaurants worldwide by year-end.

## Vietnam's top leader To Lam consolidates power, gets China-style mandate

HANOI — Vietnam's lawmakers on Tuesday unanimously elected Communist Party General Secretary To Lam as the country's state president for the next five years, making him the most powerful Vietnamese leader in decades.

The widely anticipated move marks a break from Vietnam's traditional collective leadership system, consolidating authority in one figure in ways analysts say could tilt the one-party state toward greater authoritarianism, while also enabling faster decision making, similar to its neighbor China.

The parliament endorsed the Communist Party's nomination, which officials said was finalized in a meeting at the end of March.

The former head of public security now has a double mandate to rule the country for the next five years,

after he secured a second term as general secretary in January.

After the vote, Mr. Lam told deputies in a televised address that it was an honor to hold both posts and pledged "a new growth model with science, technology, innovation, and digital transformation as the primary driving forces." He also said he would prioritize self-reliance in defense.

"Concentrating greater power in To Lam's hands could pose risks to Vietnam's political system, such as increased authoritarianism," said Le Hong Hiep, senior fellow at the ISEAS Yusof Ishak Institute in Singapore.

However, such consolidation "could enable Vietnam to formulate and implement policies more quickly and effectively," supporting growth, he said.

— Reuters

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## Iran defiant on eve of Trump's ceasefire deadline

DUBAI/WASHINGTON — Iran and Israel traded attacks on Tuesday as Tehran defiantly refused to reopen the Strait of Hormuz and accept a ceasefire deal on the eve of a deadline set by US President Donald J. Trump to agree to his demands or get "taken out."

Iran has rejected a US proposal brokered by Pakistan for an immediate ceasefire and the lifting of its effective blockade of the Strait, followed by talks on a broader peace settlement within 15 to 20 days, according to a source aware of the plan.

The Iranian response consisted of 10 clauses, including an end to conflicts in the region, a protocol for safe passage through the Strait of Hormuz, lifting of sanctions, and reconstruction, official IRNA news agency reported.

On Monday, Mr. Trump said "the entire country can be taken out in one night, and that night might be tomorrow night." He vowed to destroy Iranian power plants and infrastructure if Tehran refused to agree before the deadline.

Without a deal, Mr. Trump said "every bridge in Iran will be decimated" by midnight EDT (0400 GMT) on Wednesday and "every power plant in Iran will be out of business, burning, exploding, and never to be used again."

### FIGHTING UNABATED

Early on Tuesday, the Israeli military said it had completed a wave of airstrikes targeting Iranian government infrastructure in Tehran and other areas. It was operating air defense systems to intercept missiles launched from Iran.

Saudi Arabia intercepted ballistic missiles towards its eastern region with debris falling near energy facilities, its defense ministry said without specifying who launched the projectiles.

Saudi Arabia has come under attack from hundreds of Iranian missiles and drones since the US and Israel launched the war on Iran on Feb. 28, most of which were intercepted, authorities have said.

Saudi Arabia, the United Arab Emirates and Bahrain issued simultaneous public safety alerts on Tuesday.

Mr. Trump has brushed off questions that his vow to wipe out Iranian power plants would constitute war crimes, saying he was "not at all" concerned about the prospect.

"I hope I don't have to do it," he said.

Iran's envoy to the United Nations said on Monday that Mr. Trump's threat to strike was "direct incitement to terrorism and provide clear evidence of intent to commit war crimes under international law."

Iran's deputy sports minister, Alireza Rahimi, called on artists and athletes to form human chains at power plants across the country on Tuesday, and its top military command said Mr. Trump was "delusional."

A synagogue in the center of Iran's capital was heavily damaged by a US-Israeli projectile on Tuesday, according to the semi-official news agency Mehr.

### CHOKEHOLD

Oil prices hovered around \$110 per barrel on Tuesday as Mr. Trump's deadline loomed

and little visible prospect of the reopening of the Strait of Hormuz, a key global oil transit chokepoint that has spurred inflation worries around the world.

Iran effectively closed Hormuz, a conduit for about a fifth of the world's oil and natural gas supply that has proved a powerful bargaining chip for Tehran which it is reluctant to relinquish.

Brent crude futures LCOc1 rose 0.4% to \$110.19 a barrel while US West Texas Intermediate crude CLc1 futures climbed 0.8% to \$113.31.

Mr. Trump was on the verge of a political crisis as Iran proved a tougher adversary than he predicted at the start of the conflict, which he said was aimed at stopping the country from building nuclear weapons and developing missiles to deliver them.

With 13 US service members killed since the conflict began, he found himself on an even more perilous ground when a US F-15E fighter jet was downed on Friday and one of the two airmen was left stranded deep inside Iranian territory.

A rescue mission by US commandos to extract the stranded weapons specialist officer to safety helped avert a disastrous escalation of a political crisis for Mr. Trump.

Thousands of people have been killed across the Middle East in the war, including 3,546 in Iran, US-based rights group HRANA said, and nearly 1,500 in Lebanon where Israel has targeted the Iran-backed Hezbollah militia. — Reuters

## Artemis II moon crew flies farther than humans have ever gone before

HOUSTON — The four astronauts of the National Aeronautics and Space Administration's (NASA) Artemis II mission flew deeper into space on Monday than any humans before them, as they cruised through a rare flyby of the moon that revealed a lunar surface under cosmic bombardment.

The six-hour survey of the normally hidden hemisphere of Earth's only natural satellite was highlighted by the astronauts' direct visual observations of "impact flashes" from meteors pelting the darkened and heavily cratered lunar surface.

About two dozen scientists packed a conference room adjacent to mission control at NASA's Johnson Space Center in Houston to record the lunar phenomena witnessed by the Artemis crew in real time as their Orion spacecraft, about the size of an SUV, sailed around the moon roughly a quarter million miles (402,000 kilometers) from Earth.

The six-hour flyby, which swooped to within 4,070 miles of the lunar surface, came six days into a spaceflight marking the world's first voyage of astronauts to the vicinity of the moon since NASA's Cold War-era Apollo missions more than half a century ago.

Six of those missions landed two-man teams on the moon between 1969 and 1972 — the only 12 humans ever to walk on its surface.

Artemis, a successor to the Apollo program, aims to repeat that achievement by 2028, ahead of China's first landing, and to establish a long-term US lunar presence over the next decade, including a moon base to serve as a proving ground for potential future missions to Mars.

While designed as a crewed dress rehearsal for future lunar excursions, Artemis II generated a wealth of new material for lunar scientists to study, including meteor impact flashes recorded during Monday's flyby that were reminiscent of sparks and streaks



HANDOUT VIA REUTERS/NASA

NASA astronaut and Artemis II Commander Reid Wiseman peers out of one of the Orion spacecraft's main cabin windows, looking back at Earth, as the crew travels towards the Moon, April 2.

of light described by some of Apollo's astronauts.

The Artemis II crew, riding in their Orion capsule since launching from Florida last week, began their sixth day

of spaceflight as they awoke on Monday to a pre-recorded message from the late NASA astronaut Jim Lovell, who flew aboard the Apollo 8 and Apollo 13 moon missions.

"Welcome to my old neighborhood," said Mr. Lovell, who died last year at age 97. "It's a historic day, and I know how busy you'll be, but don't forget to enjoy the view... good luck and Godspeed."

Hours later, the crew consisting of US astronauts Reid Wiseman, Victor Glover and Christina Koch along with Canadian astronaut Jeremy Hansen, made spaceflight history by venturing farther from Earth than any humans have before, at 252,756 miles.

The previous record, roughly 248,000 miles, was set in 1970 by Apollo 13 after a nearly catastrophic spacecraft malfunction cut short that mission, forcing Mr. Lovell and his two crewmates to use the moon's gravity to help return them safely to Earth.

### NAMING CRATERS

En route to the far side of the moon, the Artemis astronauts spent some time assigning provisional new names to lunar features that previously lacked official designations.

In a radio message to mission control in Houston, Mr. Hansen suggested one crater be dubbed Integrity, after the name given to the crew's Orion capsule, and that another be named in honor of Mr. Wiseman's late wife, Carroll, who died of cancer in 2020.

"A number of years ago we started this journey, our close-knit astronaut family, and we lost a loved one," Mr. Hansen said of the mission commander's late spouse, his voice choking with emotion as he described the position of her lunar namesake. "It's a bright spot on the Moon, and we would like to call that Carroll."

Mr. Hansen later said the crew had viewed a number of lunar features that "no human has ever seen before, not even in Apollo."

— Reuters

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