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From the Danantara Indonesia **Investor Relations** Team

INVESTING AT DANANTARA INDONESIA

Small but Many, Big but Few

Where grassroots philosophy meets industrial-scale energy, in Bali's fight against waste

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Sunrise at Keramas Beach in Gianyar, Bali: new beginnings for the island's fight against waste. / Photo credit: Danantara Indonesia Investor Relations team

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"It is one world. And it's in our care. For the first time in the history of humanity... **one species has the future in the palm of its hands.**"

DAVID ATTENBOROUGH, broadcaster and naturalist

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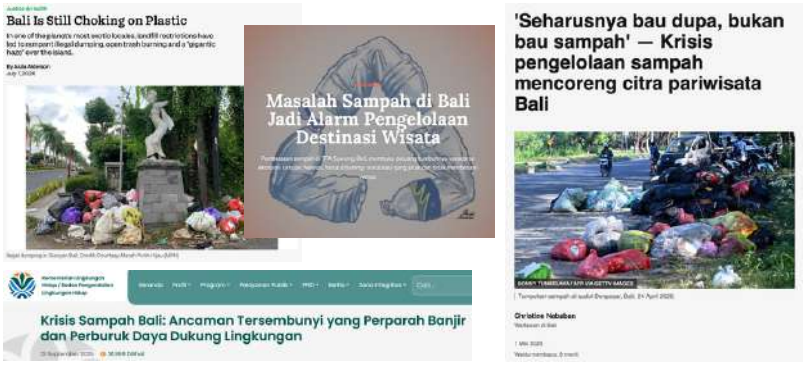
Valerine Chandrakesuma went diving off Nusa Penida, a popular spot at the southeastern coast of Bali, in December 2017. Her expectation was to glide with manta rays through clear blue water.

Instead, she found trash. Plastic and debris, floating in the water. Valerine found herself apologizing to the fish. But the fish swam on, indifferent, as if reminding her: *we are fish. What can we do?*

The next question was for Valerine. “I’m human. What can I do?” she recounted to the investor relations team as we visited the Ubud workshop of WeDoo, the social enterprise she co-founded.

This is the reality of Bali. The “Island of the Gods,” where paradise and paradox share an address.

Lush rice fields, crisp mountain air, world-renowned beaches, and a tween in pink plastic sunglasses with a coconut in hand, convinced she had found paradise. Simultaneously generating 3,436 tons of waste each day out of more than Indonesia’s 140,000 tons. For one of the archipelago’s smaller islands, disproportionately huge.



"Seharusnya bau dupa, bukan bau sampah." It should smell of incense, not garbage. A crisis that made headlines across languages and outlets. / Photo credit: Inside Climate News, Kompas, Kementerian Lingkungan Hidup, BBC News Indonesia

The contradiction does not resolve itself just because the beaches are beautiful. This is also, increasingly, a story that has moved past headlines and into passing TikToks: an environmental issue that has become a social one for everyone.

The investor relations team met Valerine as we visited Bali for the groundbreaking of PT Daya Energi Bersih Nusantara (Denera)’s Waste-to-Energy (WtE) facility in South Denpasar. For Denera, the entity housing Danantara Investment Management (DIM)’s WtE project, this is the first of many facilities, planted across the archipelago.

What follows is a story in two registers.

One is small, slow, and personal: a woman, a workshop on the edge of Ubud, four hundred machines built one at a time. The other is large, loud, and ceremonial: a groundbreaking in Pedungan Village and a project measured in hundreds of thousands of tons.

On their own, neither can be the whole answer. Together, they might be.

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Knock on Plastic

WeDoo's workshop is roughly an hour's drive from I Gusti Ngurah Rai airport. Racing to arrive before they closed at 5 PM, we still took almost an hour and a half. It was worth it, though: the crisp mountain air was a relief after a rough flight and a queasy drive north.

Serene view from the second floor of the new workshop: a welcome break from the SCBD scenery back at the office. / Photo credit: Danantara Indonesia Investor Relations team

When we meet, Valerine is 35 weeks pregnant. We joke that the baby could arrive mid-interview. Knock on wood. Or plastic, since the nearest piece of furniture was made of it: unintentionally, the most on-brand opening line available to her.

Her workshop sits at the edge of Ubud, next door to an ordinary village home, close enough to a rice field that Nala, the office dog (breed unclear, provenance unknown, loyalty absolute) spends her afternoons rolling in. Kids fly kites over the field some evenings. The office has an air conditioner nobody has ever needed to switch on: the breeze does the job for free.

Mischievous Nala, the office dog who guards the workshop on weekdays, tails Valerine and her husband on weekends. / Photo credit: Danantara Indonesia Investor Relations team

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Inside, propped in the interview room like a piece of found art, is a guitar made entirely of recycled plastic. It plays. That, in miniature, is the whole philosophy of WeDoo.

WeDoo co-founder Valerine, and what plastic waste can become: a guitar that plays, artwork that holds, furniture that sits. / Photo credit: Danantara Indonesia Investor Relations team

After the dive at Manta Point, Valerine flew back to Vancouver, where she was studying architecture. There, she joined Melt, a campus-based group already experimenting with open-source recycling. That means building machines out of whatever was on hand.

She joined in, and eventually started Indo Melt, the group's Indonesian chapter, building machines at their Vancouver lab before shipping them to Bali.

Replacable blades inside the Organic Crusher, shredding organic waste into smaller pieces and preparing them for composting or further treatment. / Photo credit: WeDoo

WeDoo was incorporated in January 2023, though the machines predate the paperwork. It has since built roughly four hundred of them, designed to help clients recycle plastic, coconuts, and even organic waste: from shredding to crushing to composting.

One of the machines' selling points is repair-first engineering. They boast replaceable blades and a maintenance team on call, though the latter may not be necessary.

"We also tried to make sure that the machine is easy enough for the client to repair themselves," Valerine said, "and provide free training and video manuals for our clients to prevent operator error in the first place."

WeDoo does not make products. It makes the tools that let other people make products, "so our clients can make their own solutions," as Valerine puts it.

Sayang, WeDoo's sister lab, houses the material-science side of the work: plastic, glass, organics, and biomaterials, which, Valerine shared, had started blurring together with the machines themselves.

Sayang is dedicated to exploring the functional potential of what others discard. "We believe waste can be transformed into something useful, beautiful, and meaningful," she said.

There, she and her team lead the technical and creative process of turning that material into high-quality products: pushing the boundaries of both the materials and WeDoo's machines.

Sayang also focuses on education. Beyond knowledge-sharing through social media, Valerine and her team lead workshops, like this one at Green School Bali for students and their sponsored peers from a local partner school. / Photo credit: WeDoo

The name, she explains, plays on *sayang dibuang* (too precious to throw away) and *sayang bumi* (love for the earth).

It was also, admittedly, a deliberate softening: WeDoo's workforce had been trending male, and Sayang was meant to build something more maternal alongside it.

Together, it works as a decentralized system for a circular economy. "We enable people to do something. We do[o]," Valerine explains.

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Small but Many

Indonesia's archipelago is usually treated as a logistical curse for waste management: thousands of islands, no centralized system.

Valerine treats it as the opposite: process the waste where it already is. High-value PET plastic sells for around Rp 6,000 a kilogram in Java. In North Maluku or Papua, the same plastic is worthless, because there is no economical way to ship it out. Shred and bale it locally, even partially, and the economics, as well as the incentive to keep collecting, change.

Still, Valerine is clear-eyed about the limits of her own model.

Waste-to-Energy, or *Pengolahan Sampah Menjadi Energi Listrik* (PSEL), has one advantage her machines do not: it does not need sorting, and it can take what WeDoo cannot. Low-value, contaminated stuff, like oily food wrappers, plastic bags soaked through with what they once carried. The kind river-cleanup crews spend half a day scrubbing before it is sanitized enough to press into furniture.

What she pushes back on, knocking on the plastic table for emphasis, is the idea that burning should be the default: if a piece of plastic can become, let's say, a table someone actually needs, why not? "Useful," Valerine says, "and more beautiful."

Mountains of trash at TPA Suwung, Bali's answer to Bantargebang, where waste goes to sit and remain untreated. / Photo credit: Danantara Indonesia

But she is quick to add that the two are not competing for the same pile of waste: WtE picks up exactly where her machines have to stop. Which is, in the end, the whole argument for what comes next.

This is precisely the kind of ecosystem Danantara Indonesia seeks to catalyze: not replacing entrepreneurs or the private sector, but enabling them to scale.

Waste is everybody's issue, because we all produce it, and every solution that gets us closer to zero is worth having: a top-down solution like WtE is as necessary as the grassroots kind. Small but many, in addition to big but few.

TPA Suwung, the landfill serving Greater Denpasar, is not an abstraction. It caught fire five times in seven years. The 2023 blaze burned for a month and forced hundreds of nearby residents to evacuate. That is not a Bali-specific anomaly.

As discussed in Issue 31 of Danantara Indonesia Diaries, Bantargebang, Jakarta's landfill, has produced contaminated groundwater within a kilometer of its edges for over a decade, and living within five kilometers of a landfill carries an 11.4% higher risk of depression.

None of this shows up on a balance sheet, but it shows up somewhere: Indonesia's 550 landfills handle 56.6 million tonnes of waste a year, and only around 39% of it is properly processed. Poor sanitation and waste management already cost the country an estimated 2.3% of GDP annually, a cost paid continuously rather than invoiced.

Against that backdrop, a WtE facility processing 1,500 tons a day is not simply an emissions project. It is a bet that some of that invisible cost can be made to disappear before it's incurred.

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The Big, Top-Down Solution

Where we had spent time north in Ubud in the first half of this trip, we spent the second in South Denpasar, in Pedungan Village.

On 8 July 2026, the first groundbreaking for Danantara Indonesia's WtE initiative took place: marking the first location for the PSEL facility's construction.

A tent had been pitched on the planned site itself, board flooring laid over the gravel where the facility will eventually stand. We were embraced by Balinese percussive orchestra. The aura felt right. And feeling good about the day was not an illusory perception: I Wayan Koster, Governor of Bali, confirmed this during his speech.

The Wednesday was chosen deliberately: *hari yang baik*, a good day, he explains.

I Wayan Koster during his speech at the groundbreaking event / Photo credit: Danantara Indonesia

"We did not choose a date," I Wayan said, "we chose a good day: Wednesday according to the national calendar, but in Bali, it represents Buda Dina, Buda Umanis, Wuku Medangsia."

It is considered an auspicious calendrical alignment believed to bless new beginnings, described as honoring the earth, bestowing aura, and inviting broad support from all elements of society.

The sun that day was warm and unfiltered, the breeze soft, which he read as its own kind of consent. The ceremony passed without incident.

"Perhaps because we chose a good day, the process has run very smoothly. So in line with the mandate the government gave us, we have carried this out with full responsibility, discipline, and division of tasks," I Wayan reiterated.

PSEL Bali is designed using moving grate incinerator technology, the same technology used by the majority of operating WtE facilities worldwide, chosen for its proven reliability and its suitability to the characteristics of urban waste in Indonesia.

The entire design approach is rooted in the philosophy of Tri Hita Karana: harmony between people, nature, and God. This is translated through an iconic tower inspired by the Meru shrine, a façade incorporating traditional Balinese weaving patterns and carvings, and the use of local materials.

The facility will also include a Visitor Center and a guided educational path for schools, students, researchers, and the general public.

Photo credit: Danantara Indonesia Investor Relations team

As part of the groundbreaking ceremony, a Power Purchase Agreement was also signed with PT PLN. This forms the commercial basis for the plant's electricity to be absorbed into PLN's grid, providing offtake certainty and giving the project long-term operational sustainability.

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A Greener Bali, and Beyond

Pandu Sjahrir, CEO of Danantara Investment Management, stood on stage with the numbers.

Built to European Industrial Emissions Directive standards, PSEL Bali is designed to process 1,500 tons of waste a day, at a total investment of Rp 3 trillion, targeting more than 500,000 tons processed annually: over 40% of everything Bali generates.

On the environmental side, the project is projected to cut landfill-based waste emissions by 80% and carbon emissions by 640,000 tons of CO2-equivalent a year.

On energy, it's expected to power roughly 100,000 Balinese households, while creating up to 1,200 green jobs during construction and operations. Aiming to be operational within the first half of 2028.

The economics extend past the plant gates.

Bali's tourism economy runs on a currency harder to quantify: the island's postcard image. Every viral photo of trash-choked beaches is a small tax paid in cancelled bookings and lower willingness-to-pay.

Pandu Sjahrir, CEO of Danantara Investment Management /
Photo credit: Danantara Indonesia Investor Relations team

For WeDoo, the proof sits in a handful of its client stories.

Potato Head, kept deliberately spotless as a showpiece for guests, now sending under 1% of its waste to landfill.

Kopi Nako in Bogor, which started as a customer and ended up owning two sheet presses and an extruder.

A baler client, Sungai Watch, turning river-collected plastic bags into furniture.

And, farthest afield, Moware in the Khumbu region near Everest in northeastern Nepal, where hikers carry their own trash, and litter left by others, down the mountain in one-kilogram bags because there's no other way out, airlines waiving baggage fees for the extra weight. That same mountain plastic then processed into souvenirs for tourists, waste becoming the very material of the memory they take home.

Waste, at the size Indonesia produces it, was never going to be solved by one clever idea.

Valerine's four hundred machines can turn a plastic bag into handy products, one workshop at a time, but they cannot absorb 500,000 tons a year. PSEL can, but it needed someone, somewhere, to first ask the harder question.

Small but many. Big but few. Running in parallel rather than in competition, aimed at the same finish line: a Bali that is not defined by what washes up on its beaches.

If it works here, on an island small enough to see the whole problem at once, there is a version of this story that spills over to the next island, and the one after that. A greener Bali, and eventually, a greener Indonesia.

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Did You Know?

Manta ray gliding among trash and debris at the Manta Point / Photo credit: Valerine Chandrakesuma

Nusa Penida's manta rays may ingest up to 63 pieces of plastic every hour they feed, in waters where plastic abundance spikes up to 44 times higher during the rainy season, according to a 2019 study by Elitza Germanov and colleagues, published in *Frontiers in Marine Science*.

Their feces and vomit have tested positive for plastic: proof these filter-feeders can no longer tell trash from food. Every unmanaged wrapper or bag ends up in their gills. Proper waste management and education are the line between a manta's next plankton meal and its next mouthful of plastic.

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Danantara Indonesia Diaries *is a newsletter produced by Danantara Indonesia's investor relations team.*