

Tech-king the plastic crisis



Ocean-bound plastics are made useful again through recycling, writes Izwan Ismail

Plastic is one of the most used items in our daily lives but it is also one of the most hazardous materials around, especially to wildlife.

Yearly, millions of tonnes of plastic in all forms are found in the ocean, posing a threat to marine life.

YOU MAY ALSO LIKE

- [The world needs a treaty to regulate plastic pollution management](#)
- [Pandemic fuels plastic surgery boom in Brazil](#)
- [Single-use plastics find foe in Mrs Malaysia World](#)
- [160 turtles caught in plastic waste rescued from Bangladesh beach](#)

Recent research estimates an average of eight million metric tonnes of plastic materials enter the world's oceans annually, and that amount increases by seven per cent per year.

This debris is choking reefs, killing wildlife and threatening entire ecosystems. By 2050, scientists estimate there could be more plastic than fish in the sea.

One key way to address this problem is to prevent plastics from entering the ocean.

SUSTAINABLE INITIATIVE

Cleaning the beach and ocean is a good start but how do we make that initiative sustainable and prevent plastics from going into the ocean?

Computer maker Dell, in partnership with Lonely Whale Foundation, has taken one of the early steps to tackle this problem by using ocean-bound plastics in its packaging, incorporating plastics collected from beaches, waterways and coastal areas for the protective trays for its XPS 13 two-in-one laptop.

Lonely Whale is an organisation that champions the oceans' health and the well-being of marine wildlife through education and awareness.



Yearly, million tonnes of plastic in all kind of forms get to the ocean posing threats to marine life.

The initiative is a part of Dell's 2020 Legacy of Good goals to ensure that 100 per cent of its product packaging is sourced from sustainable materials.

It has also made a pledge to the United Nations to increase its annual use of ocean plastics by 10 times by 2025 and to help build further demand by convening a working group with other manufacturers to create an open-source ocean plastics supply chain.

WHY THE NEED TO RECYCLE

According to Lonely Whale Foundation's executive director Dune Ives, an estimated eight million tonnes of plastic waste entered the ocean in 2010.

If trends do not change, more than 150 million tonnes of plastic waste will have entered the ocean by 2025.

“Only 10 per cent of plastics get recycled and the rest is lost in the environment and ocean. Eighty per cent of litter in the sea are plastics and what we see on the surface is five per cent of what’s in the ocean,” she says.



Ives holding a protective tray for its XPS 13 two-in-one laptop, which is made from recycled ocean-bound plastics.

This poses not only a threat to vital ocean ecosystems including critical fish nurseries and coral reefs but also adversely affects the health and longevity of marine species and humans too.

According to some estimates, there are more than five trillion pieces of plastics in the oceans right now, which is equivalent to five grocery bags full of plastic stacked upon every foot of every nation’s coastline around the world.

Ives says the types of plastic found in the ocean include a wide variety and range of plastics.

They include LDPE plastic bags, polypropylene, PET, HDPE, styrofoam and nylon.

Plastics can turn into smaller forms overtime when at sea, so many sea animals see them as food.

“Plastics break down into ever smaller pieces but they never break down completely,” says Ives.

“Small plastic pieces can be ingested by birds and other animals. It’s also troubling to know that micro-fractured plastics have now been found in plankton,” she says.

As plastic is consumed by these organisms and travels up the food chain, it becomes concentrated in the fatty tissue with an increasing effect of toxicity.

In her talk on Keeping Plastics in the Economy and Out of the Oceans, organised by Dell recently, she showed a photo of a dead seagull with a belly full with plastic materials.

“This is a crisis for marine animals, and a million birds died a year due to plastic consumption.”



A dead seagull, which had a belly full with plastic materials. PICTURE CREDIT: CHRIS JORDAN

HOW IT'S DONE

Dell plans to turn eight tonnes of ocean-bound plastics into packaging of XPS 13 two-in-one this year.

Dell Malaysia managing director and senior vice-president, South Asia and Korea, Pang Yee Beng, says: “The pollution problem is particularly worrisome and together with Lonely Whale, we began to look at ways to make a difference,” he says.

Dell wants to help break this cycle by keeping plastics in the economy and out of the ocean.

“We are creating the first commercial scale global ocean-bound plastics supply chain. We are processing plastics collected from beaches, waterways and coastal areas and using them as part of a new packaging system for the XPS 13 two-in-one laptop globally,” he says.

This initial pilot project will start by keeping 7,257kg of plastics out of the ocean.

The recycled ocean-bound plastics are not just used for making protective trays for the laptop but also other parts of laptops such as keyboards, laptop surface and motherboard.



“If we apply innovation and determination, we can drive the initiative.” - Pang Yee Beng

Dell has made switching to a circular economy approach a priority.

It began working with recycled-content materials more than 10 years ago and continues to build a global supply chain based around sustainability at scale.

Ocean-bound plastics are the perfect example of how a resource can go from linear to circular.

If the plastics wind up in the ocean, they breakdown into small pieces and the ability to recover them is greatly diminished, while the havoc they wreak grows.

This is the case of much of the contents of the giant ocean garbage gyres — swirling areas of broken-down waste that becomes too contaminated to be currently usable.

“When Dell uses plastics from the beach, shorelines, waterways and coastal areas, we bring them back into the economy and stop them from breaking down and becoming part of a bigger problem,” says Pang.

The process creates jobs for the recyclers, provides a template for others to follow and helps put a dent in the vast problem of plastics entering the ocean.

The plastics are sourced from Indonesia, Thailand, Malaysia, Costa Rica, India and even Denmark, in the form of fishing nets.

“Our pipeline of innovative packaging ideas seemed like a natural place to start,” says Pang.

“Dell has long focused on reducing the impact of packaging by optimising the size of our packaging and seeking out sustainable materials.

“If we apply innovation and determination, we can drive the initiative.”

ENSURING SUSTAINABILITY

The recycling initiative that Dell pursues is not a lonely one, as Lonely Whale also brings in across-industry consortium of global companies that also are committed to scaling the use of ocean-bound plastics to ensure that the recycling initiative is sustainable.

From this initial working group, a new programme called NextWave is born.

Inaugural members included Dell, General Motors, Trek Bicycle, Interface, Van de Sant, Humanscale, Bureo and Herman Miller but the numbers are increasing, says Ives.

Initially, the group will focus on Southeast Asia, where the problem is acute. There are also fledgling collection programmes in places like Indonesia.

NextWave anticipates that its members will collectively divert more than 1.36 million kg of plastics from entering the ocean within five years. This is equivalent to keeping 66 million water bottles from washing out to sea.



The XPS13 with ocean plastics packaging.

THE PROCESSES

Entrepreneurial pickers, volunteer groups and professional recycling organisations collect the plastics, which are aggregated and sorted by various waste processors.

After the plastics go through processing and refinement (to ensure a clean supply), Dell mixes the ocean-bound plastics with other recycled HDPE plastics in a 1:3 ratio.

Mixing like this ensures impurities within the recycled plastics do not affect the quality or chemical composition of the end plastic.

The resin is made entirely from recycled-content plastics, 25 per cent being ocean plastics.

The mix is then moulded into trays that get stamped with the illustration and recycling symbol.

The trays — initially launching with the XPS 13 two-in-one notebook — are curbside recyclable in many places, helping to ensure they remain a viable resource in the economy.

The trays will ship globally and the initial run will keep 7,257kg of plastics out of the oceans.

Dell's aim is to scale the project to 72,575kg by 2025 and to continue to look for ways to use the material for both packaging and products in the future.