Old trunks, new tricks: Oil palm trunk's rise in sustainable innovation

As global interest in sustainability and circular resource use grows, Malaysia is exploring new ways to add value to agricultural byproducts. One such resource is oil palm trunk (OPT) biomass, a material that was previously underutilised but is now gaining recognition for its potential in manufacturing, interior design, and green construction. Three key developments are supporting this emerging industry: the establishment of MS 2751:2022, the broadening diversity of OPT applications, and the international spotlight on OnCore palm wood at Expo 2025 in Osaka, Kansai, Japan.

With their distinctive grain and renewable origin, these panels are gaining favour among interior designers and architects (Image: IOI Palm Wood)

BUILDING CONFIDENCE THROUGH MS 2751:2022

Introduced under the Malaysian Sustainable Palm Oil (MSPO) framework, MS 2751:2022 sets out a Chain of Custody (CoC) standard for oil palm biomass. While sector-wide adoption is still in progress, this certification provides assurance that OPT-derived products are sourced, handled, and processed integrity and transparency.

By reinforcing accountability throughout the supply chain, the standard strengthens market credibility and opens doors for OPT biomass to compete in both domestic and international green markets.

EXPANDING APPLICATIONS OF OPT BIOMASS

Through advances in processing techniques, OPT biomass is now being transformed into a variety of high-value products across multiple sectors. For example, palm core doors are now used in residential and commercial buildings. These doors are lightweight, easy to install, and emit negligible levels of formaldehyde, making them both practical and environmentally responsible. OPT blockboard panels are also increasingly used in renovation and retrofitting projects. They offer a sustainable and cost-effective alternative while maintaining structural integrity and reducing environmental impact.

Furthermore, three-layer OPT panels are gaining traction in interior design and shop fitting. Their distinctive grain and sustainable origin appeal to designers working on retail spaces, offices, and home furnishings. Finally, OPT fibres are

also being deployed as a source of biomass energy. Their potential to supply renewable power on a large scale further illustrates the material's utility. These applications highlight the flexibility of OPT biomass and reinforce the case for full under MS 2751.

ONCORE PALM WOOD ON THE INTERNATIONAL STAGE

OnCore palm wood, developed by IOI Palm Wood, will be showcased at the Malaysia pavilion during Expo 2025 in Osaka, Kansai, Japan. Created from upcycled OPTs, OnCore is presented as a high-performance material suitable for a range of interior applications.

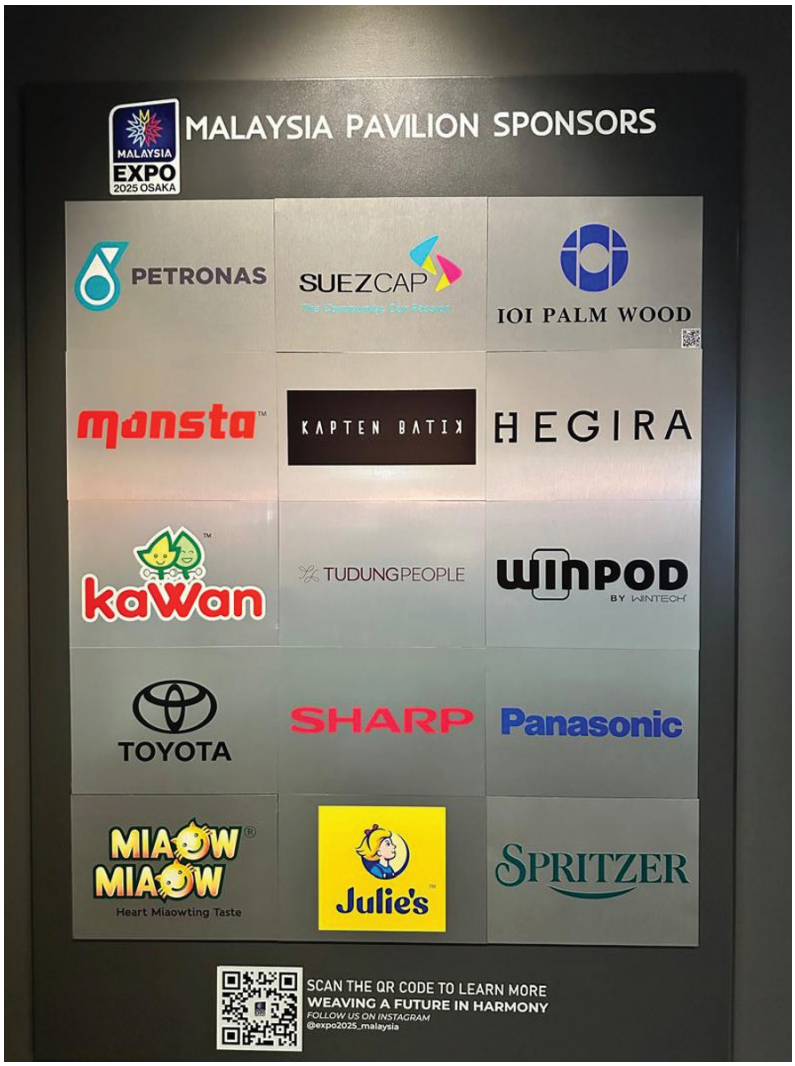
Furniture at the pavilion will feature OnCore in souvenir display shelves, kitchen counters, cabinetry as well as tabletops and seating surfaces. The material stands out for its low formaldehyde emissions, structural strength, and aesthetic appeal. It presents a viable alternative for furniture makers, interior designers, and architects focused on environmentally-conscious construction.

TOWARDS A CIRCULAR FUTURE

The journey of OPT biomass from plantation residue to certified, value-added products marks a shift in how industries approach waste, design, and resource responsibility. As MS 2751:2022 becomes widely implemented and products like OnCore gain global visibility, Malaysia is strengthening it positioning as an innovator in sustainable material.

With continued investment in processing and certification, OPT biomass has the potential to move beyond being an alternative. It can become a cornerstone of responsible production for years to come. P

Images courtesy of IOI Palm Wood.



Malaysia pavilion sponsors at Expo 2025, Osaka, Kansai, Japan (Image: IOI Palm Wood)

Inspiring the next "material revolution" by creating sustainable and high-performance materials from oil palm waste, **Peter Fitch**, together with IOI, have set up IOI Palm Wood to commercialise this untapped potential.