

RAVAGO

World-Class Plastic Recycling

Ravago's primary business is plastic recycling and compounding, providing plastic waste management services to petrochemical companies on Jurong Island, as well as to local plastic product manufacturers and consumers.

Ravago Manufacturing Singapore (RMS) is a wholly-owned subsidiary of the Ravago Group, a Belgium-based multinational corporation and a global leader in the distribution, resale, recycling, and compounding of commodity, engineering, and specialty plastic and rubber polymers. Ravago operates across all regions of the world. Established in 1978, its goal is to develop and operate a world-class plastic recycling and compounding facility in Singapore, providing consistent, high-quality, competitively priced recycled resins to customers and partners worldwide.

A COMMITMENT TO A CIRCULAR PLASTIC ECONOMY IN SINGAPORE

Ravago is at the forefront of creating a truly circular plastic economy by collaborating with the entire plastic supply chain, from producers and converters to collectors. Committed to Operation Clean Sweep, Ravago actively works to prevent the loss of microplastics to the environment, recognizing that landfill, incineration, and exporting plastic waste are not sustainable solutions.

Aligned with its global vision and as a market leader in Singapore, Ravago is invest-



ing in recycling infrastructure as a long-term solution for environmental and societal benefits. The company offers comprehensive post-industrial and post-consumer waste recycling services, including the collection, sorting, and recycling of polymer wastes. Ravago emphasises the importance of developing sustainable solutions to manage plastic waste locally, in compliance with the Basel Convention, as neighbouring countries increasingly close their doors to plastic waste imports.

Ravago has set an ambitious target to achieve near 100% in-house recycling of the plastic waste it collects. Starting with an 85% recycling rate in 2019, the installation of a new washing line in 2020 has significantly improved these figures, reaching 96% in 2021, 97% in 2022, and 98% in 2023. The efficiency and progress of these recycling efforts are meticulously tracked and easily retrievable through Ravago's ERP system.

Through these initiatives, Ravago not only demonstrates its commitment to sustainability but also leads by example in the transition towards a circular economy for plastics.

Additionally, Ravago participates in other sustainability and quality initiatives, including EcoVadis, IKEA IWAY, Responsible Care, SQAS, RSPO Certified Sustainable Palm Oil, GRS, and ISCC.

THE FIRST HYBRID WASHING LINE IN SINGAPORE

Ravago's state-of-the-art recycling line processes over 1,000 MT of materials per month with only three operators managing the line at any given time. Post-consumer wastes, which are dirty and have high organic contaminants, are very difficult to recycle mechanically and are generally sent to landfill, incinerated, or exported.

In December 2020, Ravago introduced the first hybrid washing line in Singapore, capable of processing both dirty film wastes and floor sweeps. A water treatment line was also installed to create a closed-loop system for recycling water used in the washing line. Since its installation, Ravago has been able to recycle dirty post-consumer wastes locally, increasing the rate of in-house recycling from 85% in 2019 to 98% currently. This equates to 5,000 MT of post-consumer film wastes and 1,000 MT of floor sweeps since the installation. This represents an average of 150 tonnes a month, or 1,800 tonnes per year, equivalent to about 80 forty-foot containers of waste that can be recycled locally rather than being exported or incinerated.

Ravago plants use advanced machines from EREMA, a leading plastic recycling extruder manufacturer in Austria. Their size reduction lines are equipped with hydraulic cutters, shredders, and crushers from renowned European brands, providing Ravago with a competitive edge over other recyclers.

Successfully Recycling High Volumes of Plastic Waste

With the first and only hybrid washing line in Singapore, Ravago has successfully recycled a high volume of dirty and challenging plastic wastes that would otherwise be incinerated or exported.

Although the installation of the washing line was a single event, Ravago continues to reap increasing benefits from this equipment. In line with Ravago's tagline, "We want to give back to the world what it has given us," the company believes it is its responsibility to contribute actively by doing what it does best. This includes educating and inspiring the younger generation to develop an interest in plastic recycling and creating a resilient workforce for the environmental services industry.

Moreover, increasing recycling volumes by handling more post-consumer wastes means Ravago's plant capacity will be fully utilised, leading to greater efficiency, cost reduction, and an improved bottom line.

These efforts enhance Ravago's global image, positioning it as a leading and pioneering recycler in closed-loop solutions.

Recycling Carpets into Chairs

Ravago collaborates with a carpet supplier in Singapore to recycle polypropylene (PP) carpets used in exhibitions and events. These carpets, which are currently sent for incineration, are recycled and compounded to produce plastic chairs, giving new life to valuable resources.

CONTINUOUS DIALOGUES AND COLLABORATIONS

As the leading plastic recycling company in Singapore, Ravago is dedicated to engaging in continuous dialogues, engagement, and feedback sessions with the National Environment Agency (NEA) and the Ministry of Sustainability and the Environment (MSE) on various critical environmental and plastic recycling topics. These efforts include participating in the Waste Management (WM) Sectoral Tripartite Committee Meeting, the GWDF Dialogue Session, and the CleanEnviro Summit Singapore (CESG) Catalyst.

Furthermore, Ravago is exploring with MRFs (Material Recovery Facilities) to recycle HDPE bottles, a challenging waste stream that requires a thorough washing and sorting process. The company aims to recycle 2,000 MT of this waste stream annually, which is currently either exported or incinerated.

The company also collaborates with brand owners, petrochemical companies, and

converters to develop closed-loop programmes for sustainable packaging, aiming to use at least 30% recycled resin in place of virgin raw materials. Currently, 42.5% of the resin used in Ravago's own FFS resin bags is recycled.

The company contributes to industry roundtables on the International Instrument on Plastic Pollution and collaborates on the development of guidance documents for degradable plastics, such as biodegradable, oxo-degradable, oxo-biodegradable, and compostable plastics, in Singapore.

The company is also involved in designing and assessing a take-back scheme for packaging waste, exploring potential research and development areas for plastics, and enhancing energy efficiency within the waste management sector.

IN LINE WITH SINGAPORE'S GREEN PLAN 2030 AND ZERO WASTE MASTER PLAN

In Singapore, Ravago's sustainability initiatives focus on three key areas: upcycling post-consumer wastes for more stringent packaging applications, increasing the plastic recycling rate to contribute towards Singapore's Green Plan 2030 and Zero Waste Master Plan, and attracting and grooming future leaders and talents for the Environmental Service industry.

In addition, to attract and groom young talent and build a skilled and resilient workforce for the environmental services industry, Ravago sponsors the NEA-Industry Scholarship for Polytechnic students. This initiative aims to train these students to become future leaders in the company or to lead sustainability projects.

In collaboration with regional value chain partners, Ravago aims to extend its sustainability actions and amplify their impact across the Asia region in the near future.



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