



Rethinking waste management

JTS Group leads the way in aluminium dross recycling and agriculture waste management



BY FATIHAH MANAF

WITH the growing importance of sustainability, an increasing number of companies are taking steps towards a greener future. While this is a positive trend, it's important to remember that change requires more than just ticking some items off the list. At the core of the movement towards sustainability is a passion for creating impactful change and a commitment to making a real difference in the world.

JTS Group, a company founded and led by the visionary Singaporean entrepreneur, Ramkripal Pandey, is dedicated to promoting environmental sustainability in all its operations.

His commitment to providing a holistic approach to environmental sustainability is supported by a talented team, which includes his two sons - Tridansh Bahadur Pandey and Nirezh Pandey.

After years of experience, JTS Group



Ramkripal Pandey

has established itself as a renowned name in the recycling and waste management industry. One of the group's critical assets is its research and development (R&D) expertise. With sustainability in mind, it strives to assist customers in reducing environmental liabilities and improving economic productivity.

Its portfolio comprises three specialised companies: JTS Engineering Sdn Bhd, JTS Optimax Sdn Bhd, and Taiyo Biomass Sdn Bhd.

PIONEERING ALUMINIUM RECYCLING

JTS Engineering is a leading name in Aluminium Dross Recycling (SW104), having been in the business since 1989. With a processing capacity of 1750 tonnes of dross per month, JTS Engineering plans to expand into the tolling of aluminium scrap, with a projected output of 3000 Mt per month in Korea for Phase 1 and 9000 Mt per month in Phase 2.

"The company shifted to Malaysia from Singapore in 1995. It was after dross was declared hazardous waste and many heavy industries moved to Malaysia," said Tridansh, the Business Development Director of JTS Group.

"Singapore was moving to a different industrial sector. So, JTS Engineering moved here - it became Malaysia's first dross recycling plant then."

Starting as an employee of the company, it was around 2003 when Ramkripal took over the entire operations and ownership of JTS Engineering. The main focus was solely dross recycling before the company expanded to aluminium Deox.

"I joined the company in 2010. We did an R&D with Japan. Then, we started producing Deox from the waste stream we mainly sent for disposal. The objective was to try and reduce the amount of material we sent to landfills," Tridansh elaborated.

In line with its commitment to sustainable practices, JTS Engineering has implemented stringent tracking, pollution control and monitoring systems to ensure efficiency in its operation. In 2020, JTS Engineering deployed a system to switch to using renewable fuel for melting aluminium, further reducing its carbon footprint.

"In 2019, we decided to reduce our carbon footprint because melting aluminium requires a lot of energy. The idea was to switch to natural gas, but it was over-demand here, so the supply was not there. Plus, it is not renewable. Then, we decided to go into biofuels."

In recognition of its efforts towards environmental sustainability, JTS Engineering was the first aluminium smelter to receive ISO 14067 Product Carbon Footprint (CFP) and MyHijau Certificates. Additionally, JTS Engineering is among Malaysia's first companies involved in carbon credit origination projects.

INNOVATING THROUGH R&D

The research conducted by JTS Group's R&D team from JTS Optimax covers a wide range of topics, including finding ways to increase the recovery of aluminium-based products from aluminium dross to reduce in-house waste generation and developing systems to reduce the company's dependence on fossil fuels and improve air quality.

Established in Singapore in 2012,

JTS Engineering is located in Pasir Gudang, Johor.





Aluminium Dross in block form. JTS Engineering collects aluminium dross in all forms including block, dust and loose dross.



Aluminium Dross in dust form.



Aluminium loose dross.



JTS Optimax focuses on research and development of aluminium dross.



The furnace for the new cyclone system.



The new furnace for green fuel station.

JTS Optimax's research focuses on aluminium dross management and recovery, empty fruit bunch processing and product development, biochar, activated carbon, and renewable electricity.

In 2015, JTS Optimax set up a biochar pilot plant in Malaysia with a monthly capacity of 30-60 Mt. Its Malaysian entity focuses on educating people on biochar application and uses.

Under JTS Optimax, JTS Group is currently in the R&D stage of an aluminium Deox upcycling project that will significantly transform the game for the waste management industry.

Ramkripal said: "This is a local project. We will run the trial at the local level. But if it is successful, the project can be globalised."

"We have millions of tonnes of aluminium waste being disposed of globally. If this process can be done, we can reduce the mining rate for bauxite. So, the environmental impact of this globally is huge."

JTS Optimax is committed to R&D in sustainable waste management and continuously explores innovative technologies and processes to reduce waste and promote environmental sustainability.

Additionally, JTS Optimax explores alternative technologies and



Key members of JTS Group, Ng Yoke Beng, Ramkripal and Thana.

processes for converting agricultural waste into organic products for agricultural use through closed-loop systems.

PROVIDING SUSTAINABLE BIOMASS SOLUTIONS

Taiyo Biomass, established in 2015, is a leading supplier of palm kernel shells (PKS) to Japan. The company operates three yards in West and East Malaysia, processing and supplying between 140,000 and 160,000 metric tonnes of PKS annually.

Together with Ramkripal, Taiyo Biomass was co-founded by Gordon Au, a Kanto Gakuin University graduate with a degree in Economics. In 2011, he established his own trading company, which specialises in handling and trading PKS. Gordon Au established vital contacts and relationships with mills and plantations in West Malaysia.

Gordon Au and Ramkripal's chance meeting resulted in a joint venture that combined their expertise to create Taiyo Biomass. As the

marketing director and partner of the company, Gordon Au proactively seeks out potential market prospects and continuously maintains strong relationships with clients and suppliers.

Taiyo Biomass is currently undergoing the final stages of its Global Green Label Certification (GGL) and has developed in-house software to improve the traceability of all PKS supplied.

"To do PKS in Japan, we need GGL certification, provided by the control union. To obtain that certification, your traceability must be on point," shared Tridansh.

In 2017, the company expanded its operations to Singapore, establishing a PKS marketing and sales division.

Taiyo Biomass provides various solutions and services, including procurement, maintenance and repair of all equipment, PKS stock sourcing for clients, processing of PKS stock and moisture management, provision of testing and processing equipment, and management of stockyards and labour.

JTS Group combines the technical expertise of JTS Engineering, JTS Optimax's research capabilities and Taiyo Biomass's expertise to realise its vision and mission in an enjoyable environment.

Driven by care and passion

WITH over 30 years of experience in environmental care and the circular economy, Ramkripal Pandey is a prominent figure in the industry, having represented TES-AMM at the United Nations Environment Programme (UNEP) Partnership for Action on Computing Equipment Waste (PACE).

Ramkripal is deeply committed to making a personal contribution to the environment by utilising his technical expertise to help his businesses and other organisations achieve better results in reducing their carbon footprint.

"Not many people in the industry have the passion and motivation to do the same thing - to focus on sustainability. Unfortunately, that is the case around the world," said Ramkripal.

He pointed out the carbon released from cars stuck in a traffic jam: "If you have the passion, you will look below the surface of this issue."

Having started his sustainability journey in the 1980s, Ramkripal has been involved with TES-AMM and JTS Engineering Sdn Bhd - two companies operating in different recycling industry segments, includ-

ing e-waste and aluminium dross. He then co-created JTS Optimax Sdn Bhd and Taiyo Biomass Sdn Bhd to address the regional transboundary haze problem.

ADDRESSING THE CORE PROBLEM

Ramkripal said the government must balance between the environment and economic risks.

He took the production of cathode-ray tube (CRT) monitors as an example where the products needed to be equipped with the proper recycling instruction.

"Before someone sells a product, they should develop the recycling process. If the economic recycling is lower than the raw materials you got out of it, then they should pay for it.

"If not, just like when CRT monitors came into the market, it became a Tsunami, and people would dump it wherever they wanted."

The materials from the CRT monitors, such as lead and mercury, became hazardous to the people and environment. He pointed out the same concern about the batteries of electric vehicles.

In addition, Ramkripal has long



advocated for waste reduction as a means to reduce healthcare expenses, sharing that less pollution will reduce cases of asthma.

EMPHASISING LEGISLATION AND EDUCATION

Ramkripal's leadership and dedication to sustainable business practices have led JTS Group to become a market leader in the recycling industry, focusing on reducing waste and minimising environmental impact. His vision and commitment to environmental responsibility are the driving force behind JTS Group's continued success.

"Everyone should practise sustainability. The thing is, we are humans.

As humans, we are greedy most of the time. People will look more at the commercial value they get out of it.

"Legislators can put it under soft law to motivate companies into doing it. The Department of Environment (DOE) cannot be everywhere."

Being sustainable will cost more, but companies must look at the overall tangible and intangible value they will get. Ramkripal noted that Malaysia had improved greatly in this sense - and there is always room to improve.

He then emphasised the importance of education in sustainability.

"We must build the right mindset from the young about the environment. Education is key." - @Green