

GLENCAL TECHNOLOGY

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Waste management has transitioned into one of the biggest problems for nations globally. The world is estimated to generate over 2.01 billion tonnes of solid waste, and a significant part of the garbage is not handled safely and is disposed of in a way such that the environment of the region is impacted negatively by this. With the global population steadily growing and the average waste generated per person ranging anywhere from 0.11 to 4.54 kilograms, it has become integral to find ways to recycle and dispose of the waste in a harmless manner. The total waste generated is set to grow to a record high of 3.04 billion tonnes annually by 2050.

Due to such worrisome statistics, there are few companies that have taken matters into their own hands rather than just complaining and being a part of the problem. Glencal Technology is one such pioneer that was started to honour the work of Dr. Glenn Theodore Seaborg and to showcase his ground-breaking work in the fields of nuclear science and physics. The company primarily deals with the transmission of power and reception voltage optimization. It invested heavily into a venture in Australia and that was the first of many successful undertakings that it has had as the venture took off and has become the second fastest-growing company in 2013 in Australia.

Taking a Stand for Change

It was in 2008 that Glencal Technology Co., Ltd. began to address the food and waste management crisis globally through technology. In the initial stages, as the industry was largely in its nascent stages, there was not much research available which is why the company began to utilize bacteria to degrade waste, however, it was not an efficient way and was not sustainable to do in the long run. The company has built its waste management system after multiple trials and errors along the way.

As a result of their findings, Glencal Technology Co., Ltd. began to understand the different types of waste and effective ways to recycle them. It was then that they came up with their proprietary technology named RedoxMaster® which was a breakthrough as no company in the field had figured out this particular approach to degrade and convert waste into much simpler compounds that were easily biodegradable. This new and unconventional way involves drying the organic materials of the waste without carbonizing or oxidizing them.

This method is not just efficient in the way that it works but the cost incurred by the adoption of the RedoxMaster®

technology is overwhelmingly low in comparison to the conventional ways that tend to cost more and produce more carbon dioxide emissions.

What Sets the RedoxMaster® Technology Apart from its Competitor's Methods?

Through this technology, the waste is dried ensuring the organic components break down quickly at low temperatures, and due to this, the volume of waste is reduced by 70-90%. The RedoxMaster® Technology has also been able to bring the volume down by 99% which is an exceptional feat.

The cost-effective aspect is another attractive feature as the initial investment cost for decompression and drying equipment requires a vacuum which is by no means affordable. Along with this, there are also recurring costs of fuel and electricity along with increased carbon emissions. There are more cons than pros in the traditional technologies used, however, that is not the case with the RedoxMaster® technology. Interestingly, the RedoxMaster® technology does not emit harmful exhaust and neither does it contaminate the water sources nearby. However, the nature of the waste has to be taken into account as well. Certain materials upon decomposing inevitably release some amount of harmful exhaust but the RedoxMaster® Technology does not release any additional pollutants on its own.

It also eliminates the need for the establishment of a drainage system which means a company no longer needs to worry about effluent regulations and the added cost of setting up drainpipes. The cherry on top is that it is relatively odourless as well.

Driven to Achieve Excellence

Glencal Technology represents a new wave of companies that prioritizes sustainability along with profitability. With ESG at the center of its business model, the company prides itself on working on technologies that are solely developed for the conservation and preservation of the environment. This philosophy and approach are more important than ever now as with natural





resources depleting at an alarming rate, effectively using natural resources has become mandatory and not just optional anymore.

Glencal Technology is quite literally one of a kind as they conduct their studies and detailed research on waste management issues. With the help of their findings, they indigenously develop practical ways to tackle the issues at hand. In industries that are known to require more water to produce and process organic substances, Glencal's products are the most useful. Ranging from processes such as pre-treatment to post-treatment that need heat and steam, reduction of emissions is extremely challenging but Glencal Technology has been able to develop effective systems that have reduced emissions in between the ranges of 30% to 90% and on occasion it has proven to reduce emissions over the 90% threshold. This is extremely remarkable and if practiced on a large scale, it has the potential to help economies reach their goal of becoming emission-free.

The Pandemic Effect

When global catastrophes such as the COVID-19 pandemic struck and the ongoing war in Ukraine began, the impact on the environment and preservation of the same took a backseat as survival became of paramount importance. Glencal Technology is attempting to continue to have a positive impact on nature despite such situations. The company's definition of success is a safer and healthier world where sustainability is the first priority for businesses, and economies worldwide are able to attain a perfect balance between being environmentally friendly and profitability. Due to the solid leadership of the CEO and the Director, Glencal Technology was able to steer through the rough waters that the COVID pandemic sent its way. With borders shut and business with foreign clients taking a backseat, it was hard. Funding was also an issue as tech companies must be flush with cash, however, with these hurdles, the company has just become stronger and has overcome all the challenges that have been thrust its way.

Widely Acclaimed for Proficiency

The company began at a time when environmental sustainability was not of paramount importance to companies but they took a bet on the future and predicted that waste management would be necessary for the near future and a decade later, it seems to be paying off. Today, Glencal Technology has established a separate subsidiary in order to promote the RedoxMaster® technology, and semi-governmental organizations established by the Government

of Japan such as the Japan Agriculture Cooperative Group, wealthy investment groups such as the Norinchukin Bank, and the Japan Railway Group have all bought into the work being undertaken at Glencal and have become the company's top investors.

The RedoxMaster® may be their flagship offering but it is not all that the company has been able to develop so far. Glencal Technology is now working on solving other environmental issues faced in fields such as the food manufacturing field. They are attempting to make dairy product processing, protein powder processing, and post-harvest grain drying more efficient by reducing wastage and putting to better use the byproducts of the manufacturing process.

The pharmaceutical industry is one of the biggest in the world with an estimated value spanning trillions. Glencal Technology is actively researching and developing ways to reduce raw material wastage, drying crude drugs, and reducing emissions in the treatment of cosmetic raw materials to name a few.

Treatment of food waste is another area where the procedure can be made more environmentally friendly as in the case of coffee beans, green tea, black tea, fruits, and vegetables that have a lot of remnants after human use such as peels, scraped portions, and the resultant squeezed lees can be drained of its water and used as cattle feed, biomass for plastics, and serve as raw material for the production of other by-products. The company is currently testing the drying of food waste to reduce methane emissions from cattle by replicating the effect of reducing methane bacteria in their stomach.

Glencal Technology is also exploring options to develop a mobile waste treatment machine for the military which would help during times of natural and man-made crisis.

The company is now tackling the issue of increasing plastic waste. The only way to dry out plastics requires high-heat methods that cost a lot and releases harmful emissions into the environment. They are making bioplastic in an economical and environmentally sustainable way and are utilizing the RedoxMaster® technology to dry their





biomass. This results in a homogenous and granular byproduct that is perfect for making biomass plastics. These materials can be used for an array of purposes ranging from serving as construction material to being durable enough to make food trays and coffee cups. Their strength and heat resistance capacity are excellent alternatives to the non-degradable materials being used.

Recognition for Being Excellent

Glencal Technology has been able to make a significant mark since its inception but as we know, no company can travel the distance without an able leader at the helm who motivates and drives his employees. Glencal has two leaders who have been able to bring the company this far. The President & CEO, Mr. Masahito Nakaishi and the Director, Ms. Masumi Maeno. The duo met at HSBC when they were both involved in the financial industry.

Ms. Maeno set up Glencal Technology with Mr. Nakaishi. When she was pursuing a degree at the London School of Economics, she found her true calling. She wanted to make the world a better place to live and do her part in helping preserve and sustain the environment. During her studies, she discovered that the majority of global conflicts had one thing in common, they were happening due to environmental factors such as river water disputes, impacts of climate change, and starvation. If the environment was destroyed then hunger, poverty, and pain are byproducts nobody could prevent.

From that point on, she has been a woman on a mission. Glencal Technology has not strayed away from its core philosophy of protecting the environment and in many ways ensuring some form of contribution toward maintaining peace.

What is Next for Glencal Technology?

The company is looking to develop newer ways to help the global waste management situation but on the business front, the leadership is well-versed in the fact that competitors will go to any lengths to attempt and disrupt their growth. As we have seen in the past, any new technology that comes out in the market is imitated and replicated within a matter of days, competitors give it an additional feature or two, rebrand it, and spin the product off as a unique offering. Especially if companies have the advantage when it comes to marketing and advertising, it becomes very easy for them to outperform the original creator of the technology.

However, that cannot be done to the RedoxMaster® technology as it is protected by patents and is extremely hard to replicate given its intricacies. Without detailed research and technical know-how, no competitor domestically or abroad can copy this. In addition to this, the world is now more aware of environmentally sustainable methods of production and ESG management which works in favour of Glencal Technology as they already have years of experience and results to show for their work. The company has more and more requests to integrate the RedoxMaster® technology piling up by the day due to its success rates.

The Director of Glencal Technology, Ms. Masumi Maeno is proud of the direction the company is headed towards. Her advice to all entrepreneurs out there is to believe in themselves and believe in their work. Keep doing what you can to make the world a better place to live in. According to her, if you work towards a noble cause and your intent is good, then no matter how tough the waters may get, you will always come out on top!

