

# A greener circular economy

THE Malaysia Green Technology Master Plan covers four main pillars: energy, environment, economy and social. However, while part of the policy discourse emphasises the advantages of using less plastics to lessen environmental pollution, Prof David Tyler from the Oregon University in the United States thinks otherwise.

The research done by him, called the Life-Cycle Assessment, involved reviewing all manufacturing and production processes by taking into account the raw materials and energy used, the effect on global warming and the potential for air, land and water pollution.

It was quite shocking that his research has found using a plastic bag could actually be greener compared with using a cotton bag. This is because a lot of water is required to grow cotton plants and, in the United States, a lot of poisonous herbicides are used too. Its production processes mean cotton is not so good for the environment after all. However, this does not mean a plastic bag is good for the environment either.

The research raises a question about which is more important, the production of plastics or the management of its usage?

Based on figures given by Deputy Housing and Local Government Minister Datuk Raja Kamarul Bahrin Shah during the 2018 International Solid Waste Association Congress, Malaysians produce 38,000 tonnes of waste daily (which works out to each individual producing 1.1kg of waste daily); of the 38,000 tonnes, only 24% can be recycled.

What happens to the unrecyclable waste? Rather than letting it all



end up in landfills, we could learn to reuse the waste in different ways. The Philippines, for instance, is dealing with excess plastic wastes by starting a handicraft industry based on plastics, which is popularly known as the plasticcraft movement. Popular sportswear producer Nike has introduced Nike Grind, a shoe made from recycled materials and the by-products of other manufacturing processes. There are also many "life hack" videos on the Internet explaining how to use secondhand materials to produce new products for daily conveniences.

Malaysia can take the same approach. Find a method, patent it, then use it to manufacture products on a massive scale for global export.

All these creative and innovative ideas stem from the concept of a circular economy (CE) which, in essence, is adapted from natural phenomena – for example, food cycles, where flora and fauna that produce various trees and plants become fodder for animals and this

in turn finally ends up with the animal "returning" to regrow plants and trees.

The current linear economy comprises only production processes that inevitably end in the production of wastes; transitioning to a circular economy will help to create a more ideal and civilised community in its attitude towards the environment. And this will, in turn, help besieged Mother Nature by generating greener production processes that will benefit the environment and society at large.

As for products that cannot be recycled, Malaysia is looking into waste-to-energy (WTE) technology. WTE technologies process non-renewable waste, convert the resulting solid waste residue into practical, sustainable and non-polluting forms of energy that can be used to generate electricity. Countries like Britain, Germany, Japan, South Korea and Sweden, and even Singapore, have already implemented WTE technologies

because the impact is not only good for the country but also for the lives of the people. We have only just begun to introduce this technology, and it should be extended to every state in Malaysia.

Without a sustainable solid waste management system, problems such as the pollution of Sungai Kim Kim, Jenjarom, Kulim and Sungai Petani will keep coming up over and over again.

With regard to this problem, the index measurements of water, land and air pollution need to be synced into one integrated system. With the advent of IR 4.0 (the Fourth Industrial Revolution) and 5G broadband, Malaysia can integrate a whole system based on the Internet of Things (IoT).

The IoT is the bridge that connects and exchanges data with other devices or systems over the Internet. It gives a new meaning to interoperability among machines in line with the "tech-marriage" concept in which two or more technological systems are combined.

With the technologies mentioned above, if the contamination index in one area becomes abnormal or goes beyond safe levels, residents in the affected area could receive an electronic notification on their smart devices. This would give those who are affected more time to prepare and take necessary precautions.

A comprehensive and effective policy should be implemented and not just end up as a white paper. A commitment to strict and efficient enforcement against illegal activities should be the main focus.

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