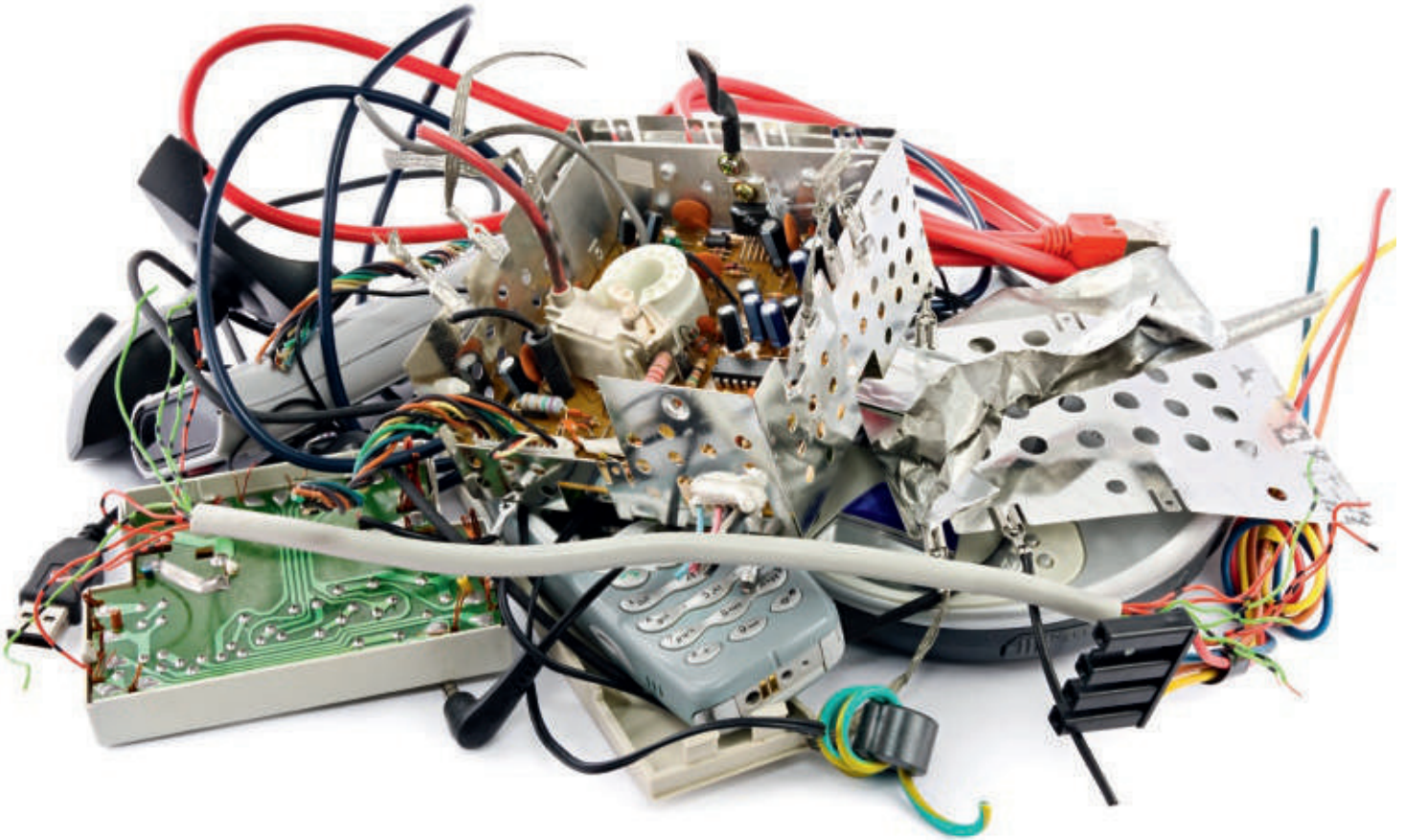


# SOLUTIONS



## TURNING TRASH INTO TREASURE

Companies are looking to circular economy models for ways to transform waste into raw materials, energy and new business models. Creativity abounds. The hard part is getting the business model right.

**T**omato skin waste as part of the raw materials in car parts. Scrap tires as furniture or playground accessories. Food and packaging waste converted into power. Or lost fishing nets recycled into nylon for carpets.

Companies around the world are thinking about, experimenting with and benefiting from their own and others' waste as a material input, a process widely referred to as a circular economy model. In some cases, it is regulators who are mandating more reuse, repair, remanufacturing and recycling; in others, companies want to operate sustainably and be acknowledged for it.

No matter what the driving force, many companies have understood that the “take, make, waste” principles of linear production and consumption put too much pressure on the world's resources and make their own supply chains risky. They are looking to circular economy models for ways to transform waste into raw materials, energy – and new business models.

That said, adopting a circular economy model is easier said than done, since it involves re-engineering processes and usually means working with new partners. Nicola Cerantola, a visiting professor specializing in the circular economy and green entrepreneurship at IE Business School in Madrid, says: “Most companies



are already thinking about reuse, or already doing it. The challenge is finding something profitable.”

Often it comes down to a logistics capability that can manage complexities, says Cerantola: To turn one person’s waste into another one’s treasure, companies must get that waste to the right spot in the right form at the right time. That can be a major feat – especially in crowded and chaotic megacities, or in tightly built city centers.

Piling that problem higher are waste volumes that are going up in line with population growth, rapid urbanization and higher levels of economic development. According to the World Energy Council’s 2016 report “Waste to Energy,” OECD countries lead in amounts of solid waste created each day by residents and account for approximately half of the world’s urban waste. A total of seven regions around the world had an average of 1.19 kilograms per day per person, while people in the OECD produced 2.15 kilograms per day.

Simon Potter, who is responsible for the Enviro-solutions and Public Sector business units at DHL Supply Chain in the U.K., says companies that want to implement a circular economy model should think ahead about hurdles they are likely to confront. For instance, a company may face internal resistance to overhauling its processes. Many have invested heavily in their own

# 572 MILLION

The number of tons of solid waste per year generated by the OECD countries

solutions, infrastructure and process capabilities around waste, and introducing a first or a new circular economy principle is perceived as risky. A second hurdle is potential partner risk. “Circular economy solutions don’t always come from the typical waste management companies and organizations,” comments Potter, adding that it’s important to have an overview of entire networks to see where waste streams can be fed back into production. Finally, companies must invest in any new solution and face the complexity of setting up a circular economy model. He says, “It’s a challenge in terms of equipment, the utilization of space, and the types of organizations to work with.”

For Potter, getting rid of your own waste should not be a burden. “It should become a way of capturing a resource. As long as your waste is handled, processed and moved in the right way, it can become economically viable to do so instead of just dumping it.”

Earlier this year at London’s Gatwick Airport, DHL Supply Chain and the airport operator began using a \$4.9 million (£3.8 million) waste plant to turn the airport’s food and packaging waste into heat energy. Gatwick is the first airport in the world to turn Category 1 airline waste into energy onsite and aims to have an 85 percent recycling rate while saving \$1,300 (£1,000) per day in energy costs. Potter comments: “We are tak-

ing material at the end of its life and creating a second and potentially third life for the material through the processes and solutions we put in place.”

The idea for the waste plant originated as DHL considered how it might avoid empty return loads for the contract it already had to supply concession stands at the terminal. At that point, waste was being removed from trash cans by a waste removal company and taken offsite, sometimes to a landfill. DHL presented the idea that it could collect the waste on runs it was already making, sort it and then burn it to capture heat for the plant and the site’s water recovery system. Later, operators hope the plant can produce additional energy to power other areas of the airport.

The Gatwick solution was in part inspired by a similar one by DHL at London’s Heathrow Airport, and Potter sees two trends emerging: The line between services offered by waste disposal companies and logistics companies may be getting blurry, and models like the one at Gatwick are ripe for application elsewhere.

“We are reaching into new ground here. This is absolutely a model that applies to other sectors, such as retailers, restaurants, pubs and hotel chains – any organization with lots of people and customers creating lots of different waste types.”

**“Getting rid of waste should become a way of capturing a resource.”**

Simon Potter, VP Public Sector and Envirosolutions at DHL Supply Chain

Cerantola sees a separate and complementary trend emerging. He expects a re-regionalization of the global economy due to developments such as trade nationalism, open source manufacturing, and technologies like 3-D printing that make it feasible to produce close to where goods are consumed.

He says this will cause the “radius” of circular economy models to shrink so they focus on local and regional reuse of waste and materials, and rely heavily on optimized micrologistics, city logistics and reverse logistics capabilities. In this vision, in which many smaller circular economy models overlap, material flow and logistics complexity will increase – but so will recapture and reuse. ■ Rhea Wessel

## GATWICK'S WORLD-BEATING WASTE PLANT

