



## A load of rubbish

**Emerging economies are rapidly adding to the global pile of garbage. But solving the problem should be easier than dealing with other environmental harms, says Jan Piotrowski**

THE OFFICES OF Miniwiz in central Taipei display all the trappings of a vibrant startup. The large open space on the 14th floor of an office block overlooking Taiwan's capital is full of hip youngsters huddled around computer screens. A common area downstairs includes a video-game console, a table-tennis table and a basketball hoop. But a hint that this is not just another e-commerce venture comes from neatly sorted sacks packed with old plastic bottles, CDs and cigarette butts.

Rather than peddle brand-new virtual products, Miniwiz derives value from physically repurposing old rubbish. Chairs in the conference room began life as plastic bottles, food packaging, aluminium cans and shoe soles. The translucent walls separating it from executives' dens owe their amber-like quality to recycled plastic mixed with discarded wheat husks. Coffee is served in glasses made of broken iPhone screens. Arthur Huang, the company's 40-year-old founder and chief executive, who holds a masters degree in architecture from Harvard, first tried setting up shop in New York in the mid-2000s. That effort failed when he discovered that few Americans shared his obsession with limiting the world's waste. By contrast, many of his fellow Taiwanese did.

They still do. The island is a poster child for recycling, recovering 52% of rubbish collected from households and commerce, as well as 77% of industrial waste, rivalling rates achieved by South Korea, Germany and other top recycling nations (America recycles 26% and 44% respectively). Its recycling industry brings in annual revenues of more than \$2bn. Lee Ying-yuan, the environment minister, boasts that 16 of the 32 teams competing at this year's football World Cup in Russia sported shirts made in Taiwan from fibres derived from recycled plastic.

For more than two centuries since the start of the Industrial Revolution, Western economies have been built upon the premise of "take, make, dispose". But the waste this created in 20th-century Europe and America was nothing compared with the rubbish now produced by emerging economies such as China. According to a new World Bank report, in 2016 the world generated 2bn tonnes of municipal solid waste (household and commercial rubbish)—up from 1.8bn tonnes just three years earlier. That equates to 740 grams (1lb 6oz) each day for every man, ▶▶

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