

Introducing a more circular economy will meet with resistance

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A SINGLE, BARE lightbulb helps illuminate part of the Livermore-Pleasanton fire department on the eastern edge of the San Francisco Bay area. It does not look out of place, if a little dim. But it is no humdrum piece of electrical equipment. For the Centennial Light, as it is known, has been burning almost continuously since 1901. To proponents of a less resource-intensive, more circular economy, the bulb (pictured) shows that everyday products can be affordable and built to last.

Not everyone has an interest in such longevity, however. In 1924 a cartel of big lightbulb manufacturers, including General Electric, Osram and Philips, agreed to keep lifetimes of their products to 1,000 hours or so, down from an average of 2,500 hours, in order to sell more of them. Many companies still make it difficult, or even illegal, to mend their products. This has provoked push-back from customers demanding a “right to repair”. French prosecutors are investigating whether Apple, which has admitted slowing older iPhones with software upgrades, deliberately intended to shorten the product’s lifetime to make customers replace it—a criminal offence in France. Legal or not, such activities look economically inefficient and environmentally foolish, even though they may make perfect sense for individual companies. The question is how to persuade those firms to go against their apparent self-interest in order to create a more circular economy.

Forecasts can help focus minds. Last year the International Resource Panel, an independent scientific body under the auspices of the UN Environment Programme, suggested that wiser use of resources could add \$2trn, or roughly the GDP of Italy, to the global economy by 2050. Limiting food waste alone could contribute \$252bn a year by 2030. Analysis by Circle Economy, a consultancy, found that, of the 84bn tonnes of materials consumed each year by the global economy—including biomass, sand, metals and fossil fuels—barely 9% are reused.

Workers need not lose out, either—in their jobs or as shoppers able to snap up more durable smartphones. A series of reports for the Club of Rome, a think-tank, found that, if product lifetimes were doubled and half the virgin materials consumed today replaced with recovered ones, the resulting economic shift would create 200,000 net new jobs in Spain and 300,000 in France. (Improving energy efficiency and replacing half of all fossil fuels used with renewables would add another 565,000 jobs across all the countries studied.) Most new work would come in green industries such as recycling. After reviewing 65 studies on the effects of a more circular economy, academics at the University of Augsburg found that related job creation outweighs job destruction. A report by McKinsey said the global net employment gains would be anywhere between 9m and 25m jobs.

The environment would benefit, with fewer mines, more trees and less need for landfills and incinerators. Recycling aluminium saves 95% of energy compared with smelting new metal. The savings are 88% for plastic, 60% for steel and paper, and 38% for glass. According to Sitra, Finland’s state-run innovation fund, raising recycling rates for aluminium, steel and plastic by 50-80% would cut European industrial emissions, which account for one-tenth of the continent’s total, by a third.

However, what makes sense environmentally may not look good for the bottom line of an individual company or region. The most obvious casualties would be purveyors of fossil fuels, minerals, agricultural produce and other primary materials, the demand for which would suffer. If everything else remained constant, eliminating 1.3bn tonnes of food waste could mean \$750bn less in sales for farmers—the value which the UN’s Food and Agriculture Organisation ascribes to all the food spoiled or lost annually between farm and fridge. More durable consumer products could mean that fewer have to be made, potentially hurting manufacturers’ volumes. More Uber rides may ultimately lead to fewer people buying cars of their own. Less need to ferry merchandise could hit shipping companies, too. The Club of Rome study found that, in Poland, where many people continue to be employed in agriculture, more productive use of resources could potentially destroy jobs overall.

Politicians in most rich countries may calculate that repatriating offshored factory jobs to plants back home where recovered materials are reprocessed is a vote-winner. But it may be less appealing to their counterparts in poorer places where workers found employment in manufacturing. Research by Garth Frazer of the University of Toronto found that clothes donated to Africa harmed African garment-makers. Between 1981 and 2000 second-hand imports explain two-fifths of the decline in African apparel production and half of the fall in garment-industry employment. South Africa has restricted imports of used Western garb. Six countries of the East African Community are considering a ban. China already has one.

You can’t refuse

This leads to a final concern about “closing the loop” of circularity: that it can ring-fence parts of economy from globalisation. As Mr Abbasov of Scrapo laments, the circular economy rarely crosses borders. Sometimes, as in the case of the Chinese ban on foreign recovered plastic and paper, ring-fencing seems to be the explicit objective. But it can also be an unintended consequence. New repair shops would by their nature be more local. Recyclers often gripe about national and international rules which, by not drawing a clear distinction as to what is hazardous, raise transport costs and hamper trade. For second-hand electronics, which are treated as waste even if they are in perfectly good working order, regulations make it several times costlier to freight within most countries and almost impossible to send abroad. “Our industry has been in almost constant strife with regulators,” grumbles Ranjit Singh Baxi, president of the Bureau for International Recycling.

Such concerns are real. But they are not insuperable. For a start, other things are never constant. Populations grow; by 2050 Earth will have 2bn more consumers and mouths to feed. As people become richer, they consume more. In poor places like Lesotho, whose citizens waste little, consumption can increase by a lot before it comes close to Western levels—especially if it is accompanied by improvements in rubbish collection. African garment-workers deserve assistance, but shoppers there benefit from cheap, decent-quality foreign wear. And “circular” industries create employment in their own right.

Even if Club of Rome or McKinsey forecasts prove wide of the mark, history teaches that reshaping the economy creates more work than it destroys. Waste disposal generates just 0.1 job

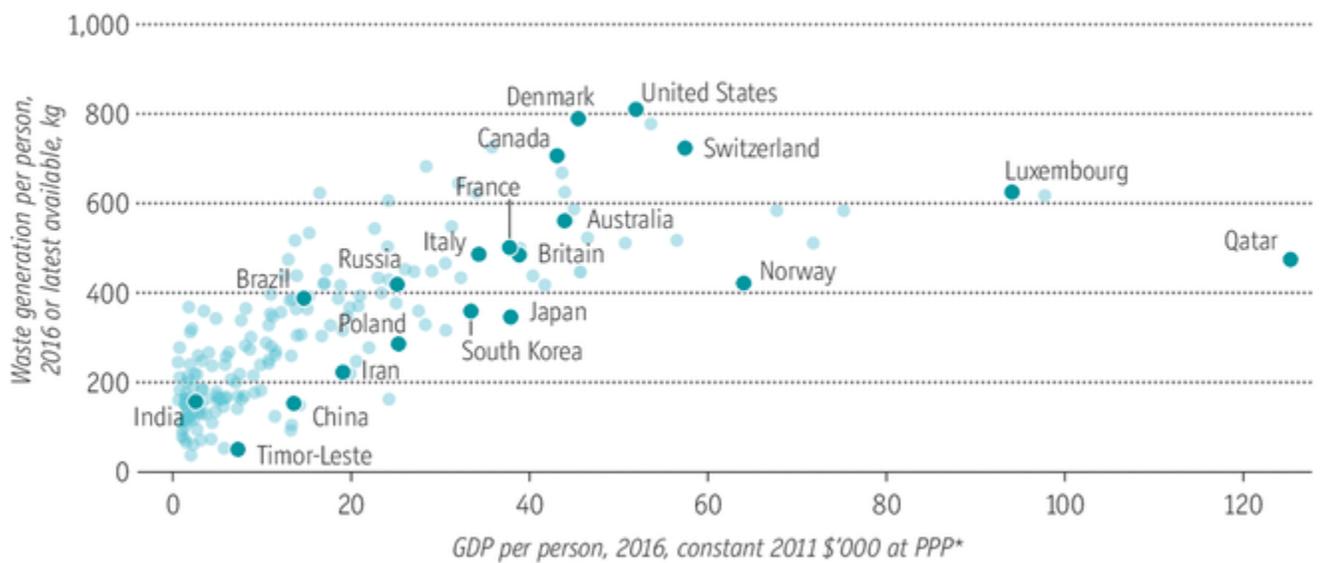
per 1,000 tonnes, compared with two jobs recycling the same amount, according to one study. A single Kenyan e-recycling programme is estimated to have generated over 2,000 jobs within four years of its launch. Recycling and repair industries could go global, too. Platforms like Scrapo or MerQbiz lubricate the exchange of recyclables across borders, showing that circular economies are not inherently protectionist.

The right response is therefore to experiment, not eschew resource efficiency. As this report has illustrated, there are signs that this is happening. Cities in the developing world are trying to get better at collecting rubbish and making sure that as little as possible goes to waste. The Chinese import ban is stirring many people in the West to relearn how to recycle. Campaigners and entrepreneurs are chivvying them along. Governments, especially in the West, are crafting “circular” strategies. By 2035 all EU states will be required by law to recover 65% of their rubbish, from an average of 40% today. America under Donald Trump is an exception, but American cities and states are compensating by helping people sort their rubbish and send less to the landfill.

Yet, while rich countries are cleaning up at home, they are only beginning to deal with the fact that (as with carbon emissions) they have exported their throwaway Industrial Revolution model around the world, outsourcing their waste to developing countries. Westerners continue to enjoy products that are made elsewhere, and whose disposal does not affect them personally. Rather than being smug about how well they are doing at home, they need now to encourage the developing world in its quest for a less wasteful growth model.

Trash and cash

Waste generation and GDP



Source: World Bank

*Purchasing-power parity

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Some middle-income countries appear willing to listen (see chart). China's latest five-year plan reaffirms its commitment to a "circular economy" and last year's party congress called for the creation of a "waste-free society". Indonesia, Nigeria and other emerging economies are emulating developed ones by making producers help pay for managing the waste created by their own products.

Most have a long way to go before they emulate Taiwan. Poor countries must prepare to cope with an increase in waste as they develop a middle class consuming at Western levels. Only when they see that proper handling of solid waste can aid prosperity will the global tide of rubbish be stemmed.