

Circular Economy

Andrew Raingold, executive director for the Aldersgate Group, describes how lifecycle innovation can stimulate a competitive advantage, growth and prosperity of limited resources

In June of this year, more than 2 000 residents in remote communities across Western Scotland were unable to make phone calls after a subsea cable was damaged by thieves trying to steal it. One of our members, BT, told *The Scotsman* that it faces a major engineering challenge to restore service from the fibre-optic cable in Loch Carron. The thieves apparently believed it was copper.

Rising prices for copper, lead and bronze have led to a dramatic rise in metal theft nationally, whether from railways lines, buildings or works of art. This is part of a crime epidemic that the police estimate is costing the economy more than £700m per year.

However, it is not just the price of metals that has witnessed sharp increases over the last few years. McKinsey's *Resource Revolution* report (November 2011) finds that the past 10 years have wiped out the entire price decline for natural resources (such as energy, food, water and materials such as steel), which occurred in the previous century. Soaring demand, predominantly from emerging markets, will occur at a time when finding new sources of supply and extracting them will be increasingly challenging and expensive. The report identifies a resource productivity revolution comparable with the progress made on labour productivity during the 20th century – with improvement opportunities representing a market value of \$2.9tn in 2030.

That is why the Aldersgate Group, an alliance of leaders from business, politics and society, has consistently argued that resource efficiency – the systematic reduction in the quantity of resource employed to produce goods and services in the economy – will be one of the key determinants of economic success and human wellbeing in the 21st century. It contends that a prudent economic policy would promote low resource consumption as a vital part of securing future competitive advantage, in advance of the market that might respond to short-term supply restrictions but is less effective at anticipating constraints in natural resource stocks.

It is clear that we are not properly valuing the impact of our society on the environment and that new frameworks to incorporate the value of our natural systems into decision-making will be vital to safeguard long-term economic growth. Many of these impacts come from the way that we exploit resources. Failure to value these properly supports the current linear approach to resource use whereby we take a resource, make something with it, use it for a while and then dump it (albeit with a gradually increasing emphasis on end of life recycling).

Getting good at end of life recycling just delays the inevitable day when specific resources either become unaffordable, unavailable or where the environmental burden associated with extracting them becomes unacceptable. Indeed, it could be argued that we are already past that point for some resources.

So what should we do about it? The circular economy seeks to provide a model to decouple economic progress from resource constraints. It is a generic term for an industrial economy that is, by design or intention, restorative and in which material flows are of two types; biological nutrients, designed to re-enter the biosphere safely, and technical nutrients (non-biological materials), which are designed to circulate at high quality, with their economic value preserved or enhanced.

The circular economy is about fundamental change, not just getting better at recycling, and as such it is an approach that has been shown to stimulate innovation through the entire lifecycle of a product, from design to materials recovery. With such innovation comes competitive advantage, growth and prosperity.

The Aldersgate Group has been using a circular economy approach to frame its current project on *Skills for a New Economy* in partnership with the Ellen

MacArthur Foundation – a charity that works to accelerate the transition to a circular economy. One of the outcomes of this initiative is that Aldersgate Group members want to take a broader approach (beyond skills development) and ask what a circular economy could mean for business.

The result is the publication of a scoping paper, *Resilience in the Round*, that was launched at the Base London conference on 21 June. The paper summarises a workshop that the Aldersgate Group held with members and external stakeholders that was hosted in collaboration with the foremost organisations working in this field. It sets out the vast economic opportunity to redesign traditional economic processes of a linear consumption pattern, addresses significant barriers that must be overcome and proposes areas for further examination.

Indeed, most of the value in the circular economy comes much further up the chain (or loop); recycling is the last resort. It is the componentisation, remanufacture, refurbishing and reselling of goods that is of most value to the economy and, in doing so, creates the most high value jobs.

A 2012 report from the Ellen MacArthur Foundation, with analysis by McKinsey, has placed

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a material cost saving opportunity of adopting this approach in Europe of between \$340bn and \$630bn per annum by 2025. In addition, there are a number of macro-economic benefits such as the mitigation of price volatility and supply risks, reduced environmental externalities and employment benefits (particularly in the tertiary services sector).

Furthermore, as the transition to a circular economy involves all aspects of a product's lifecycle, from design to recovery, the challenge is inspirational to a very wide range of sectors and disciplines compared to traditional, end of life, recycling. This includes the potential for improved customer interaction and loyalty with the shift of ownership structures and increased supply chain resilience to rising resource prices.

While linear consumption patterns are coming up against constraints posed by the availability of resources, there are significant barriers to the transition to a circular economy that need to be overcome. Some of these are simply inertia (the entire economy was founded on a linear system), which can be addressed by companies leading by example, coupled with better knowledge

sharing or improved education, whereas others will require government leadership and policy interventions.

Perhaps the greatest barriers are cultural. While there has been a discernible societal shift towards access rather than ownership (such as leasing mobile phones and car clubs), consumer acceptance needs to grow significantly. In addition, there must be a realignment of cultural values and incentives – particularly in the sales functions of businesses. Other barriers include infrastructure for "reverse logistics", reporting metrics, procurement, regulation, taxation and the valuation of externalities.

Time For A New Strategy?

THE UK has national waste strategies, but is the time now right to replace it with a national resource strategy based on circular economy principles? The Resource Security Action Plan goes some way to addressing this, but it could be developed to shift the bias further from end of life recycling towards circular by design and intention.

We also need to get much better as a nation at tracking, and making visible, material flows so that opportunities can be more readily identified. Valuable resources are currently being exported by our economy for others to use and sell back to us at a premium. Rather than recyclable waste being one of the UK's biggest exports to China, would it not be better to retain this material and add value to it within our own economy? Or does this generally represent a low level of economic benefit that will not assist the UK's long-term access to scarce resources?

Collaboration will be vital to gain competitive advantage and unlock economic value. A small number of companies at the vanguard of applying circular economy thinking are already demonstrating that it is a real value proposition. Adopting new approaches in these companies has not been without its challenges and there are some great examples of drive and vision within their leadership teams. But the pioneers should not be left to go it alone if the economic opportunities are to be maximised. How can the shift to circular economy principles be mainstreamed? How can large businesses learn from the smaller innovators?

Inevitably, at this stage, there are more questions than answers. The Aldersgate Group will continue to work with stakeholders to develop this theme further and it is clear that progress must be made across a broad front.

As the concept is further explored by businesses, it is unlikely that the price of copper will come down any time soon. So in addition to a natural resource strategy, the UK also needs a security strategy to help protect the nation's copper cables. **CIWM**



The Author

Andrew was appointed executive director of Aldersgate Group (AG) in December 2010, having played a pivotal role within AG since he joined as the first employee in January 2007. Andrew is responsible for the overall management of the AG, the development of its work programme, relationships with political and business stakeholders and representing member views.