

EU circular economy plans could cut tax costs for companies

explains why governments will need to redesign tax policies and how businesses could reduce their carbon footprint under a circular economy that may help the EU achieve its 2020 environment strategy.

The EU 2020 Strategy on the environment is the European Commission's plan for smart, inclusive and sustainable growth. The Commission says it actively supports businesses, administrations and consumers so that together "we can turn the Union into a resource-efficient, green, and competitive low-carbon economy". This is one of the three objectives of the 7th Environment Action Programme that aims to get the EU growing again and create new jobs, while contributing to the global sustainable development goals. The EU cannot afford to waste this opportunity, but it needs to get businesses from all industries on board.

A greener economy means growth and job opportunities. Eco-design, eco-innovation, waste prevention and the reuse of raw materials can bring net savings for EU businesses of up to €600 billion (\$657 billion). Additional measures to increase resource productivity by 30% by 2030 could boost GDP by nearly 1%, while creating two million additional jobs. It also benefits the environment and reduces the EU's greenhouse gas emissions, according to the EC.

However, the EC's statement on the green deal suggests it is politically motivated too.

"A decade of austerity in Europe has produced a huge amount of economic anxiety, people don't really know where to direct their anger and the far right has filled the vacuum left open by the absence of a strong progressive movement. The Green New Deal offers that in a very powerful way. We hope that by bringing this idea to the table, we can stem the rise of the far right and make a more global project viable," the Commission said.

Green growth and the circular economy

According to the European Environmental Agency, the circular economy is a relevant part of the green economy, which more widely deals with the human welfare, lifestyles and consumption models, for an extensive and inclusive well-being and with natural capital, ecosystems resilience and ecosystem services preservation.

At the root of the growing interest for the circular economy there is the inevitable need to save both renewable and non-renewable natural resources and develop a more efficient use. Since 1900, the world's population has quadrupled. Resource consumption has grown by a factor of 10 and it is expected to double by 2030.

A circular economy refers to an industrial model that is regenerative by intention, in which products are designed to facilitate reuse, disassembling, restoration and recycling to allow a large amount of materials to be re-used instead of being produced by primary extraction. A circular economy refers to a model in which businesses keep resources in use as long as possible to extract the maximum value from them while in use, and then to recover and regenerate products and materials at the end of their service life.

Eco-design is a key element of the circular economy. New engineering, or re-engineering, of production processes, goods, services and value chains according to the eco-design criteria means:

- Boosting resource and energy efficiency;
- Eliminating toxic and dangerous chemicals;
- Reducing environmental impacts in production, consumption and end-of-life management;
- Increasing products re-use, regeneration and material recycling; and
- Preventing waste production and disposal.

Businesses involved in such activities need to analyse and modify existing products and production processes. This includes doing the following:

- Verify and improve the scientific and management models – life cycle assessment algorithms, environmental management systems and the certification of products, to make the circular economy criteria more effective;
- Adopt very specific models to maximise resource efficiency towards zero waste;
- Develop research and eco-innovation. In order to enable circular economy models to reduce material and energy consumption while lasting and improving well-being, it is important to refer increasingly to the greatest renewable resource we have: the knowledge through reuse, regeneration, duration and recyclability of products, components and materials;
- Develop production and use of renewable energy and materials. Circular economy models require businesses to move away from fossil fuels, which are limited, not renewable and with a high climate impact, in favour of renewable energy sources only;
- Zero waste to dispose. In a circular economy model, waste does not get disposed, but re-used as resources;
- Address inner, multiples and cascade circles. The power of inner circles refers to minimising material usage by addressing the recovery of end-of-life products in the value chain close to the consumption phase. This approach allows a high return on the collection and treatment costs in comparison to disposal; and
- The increase of efficiency in materials used, allowing the reduction of production costs and selling prices, which can promote an increase of consumption and so the pressure on natural resources.

Sustainable taxation

Shifting towards a circular economy will involve designing a tax system with a different tax policy on renewable and non-renewable resources.

Sustainable taxation should reward desired developments and discourage unwanted effects of activities. In a sustainable economy, taxes on renewable resources including work – human labour – are counterproductive and should be abandoned. The resulting loss of state revenue could be compensated by taxing the consumption of non-renewable resources in the form of materials and energies, and of undesired wastes and emissions.

Such a shift in taxation would promote and reward a circular economy with its local low-carbon and low-resource solutions. These are inherently more labour-intensive than manufacturing because economies of scale in a circular economy are limited. Taxes on non-renewable resources could be charged in a similar way to today's value-added tax (VAT), also for imported goods. Furthermore, not taxing human labour would considerably reduce tax administration – labour tax is based on a large number of small incomes – and reduce incentives for work in the shadow economy,



Would you be willing to 'rent' your trainers so they can be returned and recycled?

which accounts for a double-digit percentage of many national GDPs.

To get businesses on board with the environmental initiatives that government want to encourage, countries should consider the following measures:

- Changes in depreciation methods: the development of second-hand markets for products that increases their value and prevents them from being depreciated to zero. It also brings up the question of when in the lifecycle a reusable resource should be taxed;
- Changing the VAT system to influence behaviour: lower VAT on labour-intensive services incentivises repairs and reduces waste; and
- Increasing the tax on emissions and technical material consumption: such a higher tax reduces the consumption of non-renewable resources.

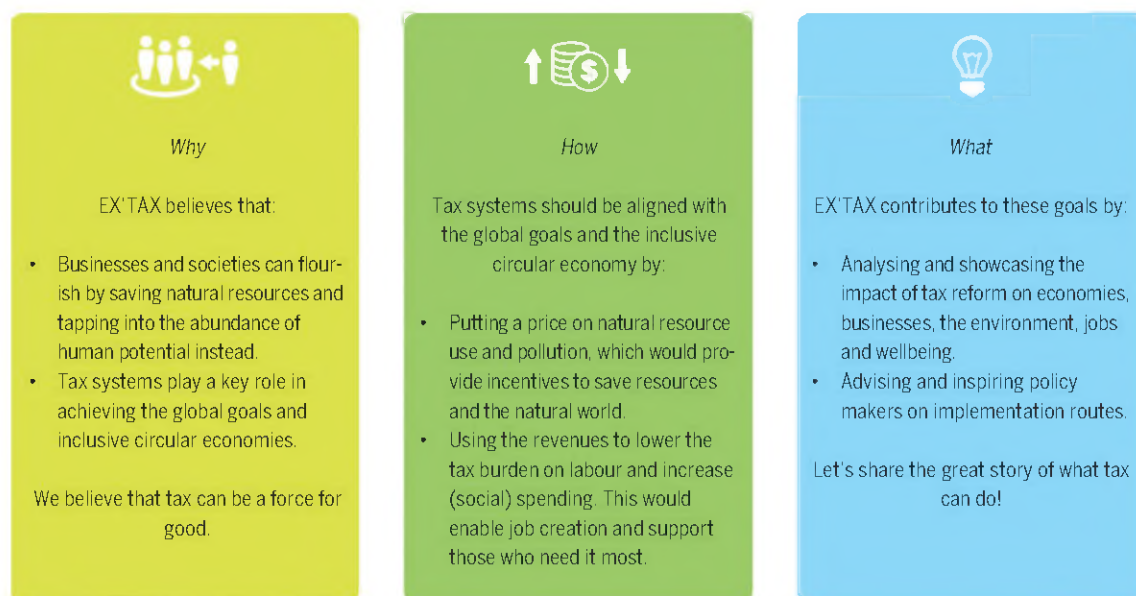
Tax systems play a key role in achieving the global goals and inclusive circular economies.

High taxes on labour encourage businesses to minimise their number of employees. Resources, however, tend to be untaxed; they are used unrestrained. This system causes unemployment, over-consumption and pollution. The plan is to put taxes on natural resources and pollution, and use the revenues to lower the tax burden on labour and increase (social) spending. Such tax reform creates incentives to save resources and the natural world. It also enables job creation and supports those who need it most.

"We should tax pollution, not people", advocates United Nations Secretary-General António Guterres. New research by the independent Dutch think tank, The Ex'tax Project, in cooperation with Cambridge Econometrics and supported by C&A Foundation, demonstrates how such tax reforms – putting a price on pollution and using the revenues for social impact – could benefit low-income countries.

According to the study, entitled 'Tax as a force for good: aligning tax systems with the SDGs and the inclusive circular economy. Case study Bangladesh', it is possible to design policies that reduce resource use and harmful emissions, while at the same time stimulating the economy and creating jobs as well as higher incomes for those who need it most.

Figure 1



Cambridge Econometrics, a UK-based economics consultancy, has modelled the impacts of two preliminary scenarios in Bangladesh. These include putting a price on carbon emissions and abolishing fossil fuel subsidies, while using the revenues to invest in clean technologies, infrastructure and social spending.

Bangladesh was chosen as a case study country as its vulnerability to climate disruption could displace more than 30 million people by 2050. Also, the country has one of the largest gaps between tax revenue and GDP, which means that there is a need to mobilise domestic resources.

The modelling suggests that by 2025, tax reforms could lead to higher GDP and employment levels, while reducing carbon emissions and energy imports. The transition can be highly progressive when revenues are mainly used to increase social spending.

Over the 2020-2025 period, both scenarios would add \$6.9 billion (in the infrastructure scenario) and \$7.8 billion (in the social scenario) to GDP, compared to business as usual (2017 prices). Additional results show that, in both scenarios, Bangladesh could create more than 500,000 new jobs, see a significant reduction in carbon emissions of more than 18 megatonnes, and save more than \$400 million on energy imports. Phasing out fossil fuel subsidies could also potentially raise domestic resources by \$4.7 billion, while a carbon tax could add an additional \$10.6 billion.

For the textiles sector, which represents 80% of Bangladesh's foreign earnings, a new tax model would have consequences. In all scenarios, the textiles sector shows a slight negative result in terms of production (0.24% and 0.15% respectively) by 2025. Overall, though, the Bangladesh economy would be stronger and more competitive in terms of carbon intensity and energy import dependency. Also, it's important to note that the competitiveness impacts of the clean-tech investments in the textiles sector (totalling more than \$2.5 billion) are not yet captured in the model. As one of the most polluting industries, operating in a fast-changing global market, the global textiles industry is at a crossroads; continuing the linear model or shifting to circular models and adapting to changing circumstances. In light of global trends, tax reform could be a way to reduce risks and future-proof the sector.

Transitioning from a linear to circular economy

There is no unique definition of a circular economy. The European Commission defines this concept under the EU Action Plan for the circular economy as follows:

"In a circular economy the value of products and materials is maintained for as long as possible; waste and resource use are minimised, and resources are kept within the economy when a product has reached the end of its life, to be used again and again to create further value."

The circular economy (CE) is an economy in which economic activities derive value under the conditions that an existing resource stock within the system is continuously recirculated to maintain its maximum value and utility over time, and fluctuations in that stock are in balance with the environment; enabling the viable and sustainable use of resources. All activities during product life cycle stages are designed to circulate the resources, and support the preservation and regeneration of the biosphere so that hazardous outputs are eliminated and regional resources are not degraded."

Traditionally, economies have referred to a linear pattern of growth (take-make-consume-dispose) assuming that resources are abundant, available, and cheap to dispose of. Instead, we need a circular model for the economy in which materials and products are re-used, repaired, refurbished and recycled. A more efficient resource use will disclose new growth opportunities and job creation: increasing resource productivity by 30% by 2030 could boost GDP by 1% while creating two million new jobs. Moving towards a circular economy is at the heart of the resource efficiency agenda established under the Europe 2020 Strategy for smart, sustainable and inclusive growth.

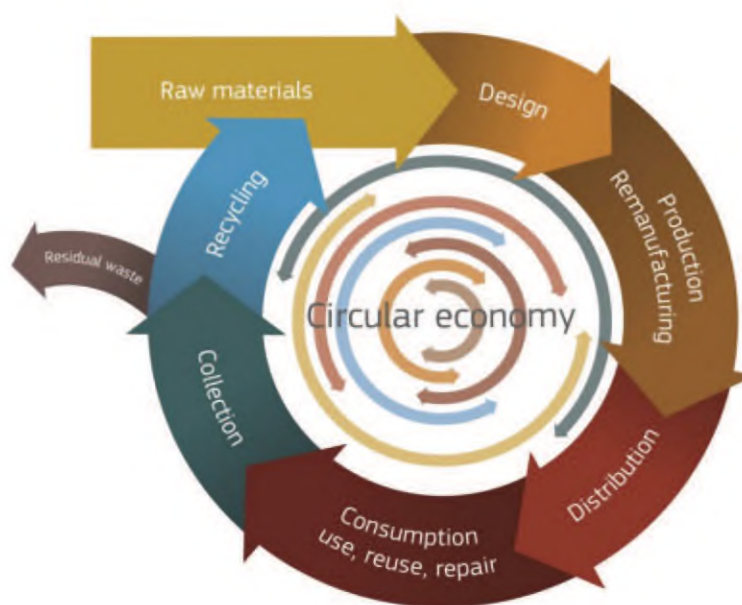
The circular economy envisions a shift away from such a linear (take-make-consume-dispose) model to a system where products, components and materials are reused in new cycles, thus closing the trajectories into loops. In this system, where everything is a resource for something else, the notion of waste disappears.

Circularity goes far beyond the concept of recycling. It is a complete system, involving changes in business models and product design, as well as collaboration between suppliers and customers.

Linear economy



Circular economy



Pollution's hidden costs – wasted resources and effort – are buried throughout a product's life cycle (Michael Porter)

The circular economy is not about making things 'less bad' but about making things 'much better' – in effect, it's about creating economic value. That includes the creation of new jobs to meet the need for new skills in craft, design and product repair.

It is time for the reality of modern competition to inform a business's thinking about the relationship between competitiveness and the environment. Traditionally, nations were competitive if their companies had access to the lowest cost inputs – capital, labour, energy, and raw materials. In industries relying on natural resources, for example, the competitive companies and countries were those with abundant local supplies. Because technology changed slowly, a comparative advantage in inputs was enough for success.

Today, globalisation is making the notion of comparative advantage obsolete. Companies can source low-cost inputs anywhere, and new, rapidly emerging technologies can offset disadvantages in the cost of inputs. Facing high labour costs in the residence country, for example, a company can automate away the need for unskilled labour. Facing a shortage of a raw material, a company can find an alternative raw material or create a synthetic one.

It is no longer enough simply to have resources, however. Using resources productively is what makes for competitiveness today. Companies can improve resource productivity by producing existing products more efficiently or by making products that are more valuable to customers – products customers are willing to pay more for.

Increasingly, the nations and companies that are most competitive are not those with access to the lowest-cost inputs but those that employ the most advanced technology and methods in using

their inputs. Because technology is constantly changing, the new paradigm of global competitiveness requires the ability to innovate rapidly.

The new paradigm has brought environmental improvement and competitiveness together. It is important to use resources productively, whether those resources are natural and physical or human and capital. Environmental progress demands that companies innovate to raise resource productivity, and that is precisely what the new challenges of global competition demand.

'Less is more' is the motto of the Sofidel Group, based in Lucca (Italy), which is global market leader in the sustainable tissue industry. It is a slogan that captures the group's full commitment to give more in terms of values, products and services by reducing consumption, waste and negative impact on the environment and people's lives. Sofidel embraces the less is more principle, which characterises all the group's work and translates into three fundamental precepts:

- 1) Reduce environmental impacts at every level, from procurement to production, from logistics to office work;
- 2) Reduce waste; and
- 3) Promote responsible consumption.

Sofidel's sustainable growth strategy is completely in line with the EU's philosophy of "building an inclusive, sustainable and resilient future for people and planet".

Only those companies that innovate successfully will win. A truly competitive industry is more likely to take up a new standard as a challenge and respond to it with innovation. An uncompetitive industry, on the other hand, may not be oriented toward innovation and thus may be tempted to fight all regulation.

Circular design winning business model: Adidas

Embracing the circular economy and closed-loop design is the only way for brands to achieve business success while safeguarding the planet, according to a senior member of the innovation team at Adidas.

The circular economy "is the solution", said Dharan Kirupanantham, an eco-innovation programme leader at the sportswear brand. "We don't see it any other way, this is not just good for the planet, this is good for business.

Developing closed-loop products is seen as a key step towards turning the global economy into a circular one, in which waste and pollution are eliminated while natural systems are restored.

The prototype shoe is made of a single recyclable material, thermoplastic polyurethane (TPU), meaning that at the end of its life the plastic can be ground up into pellets and reused.

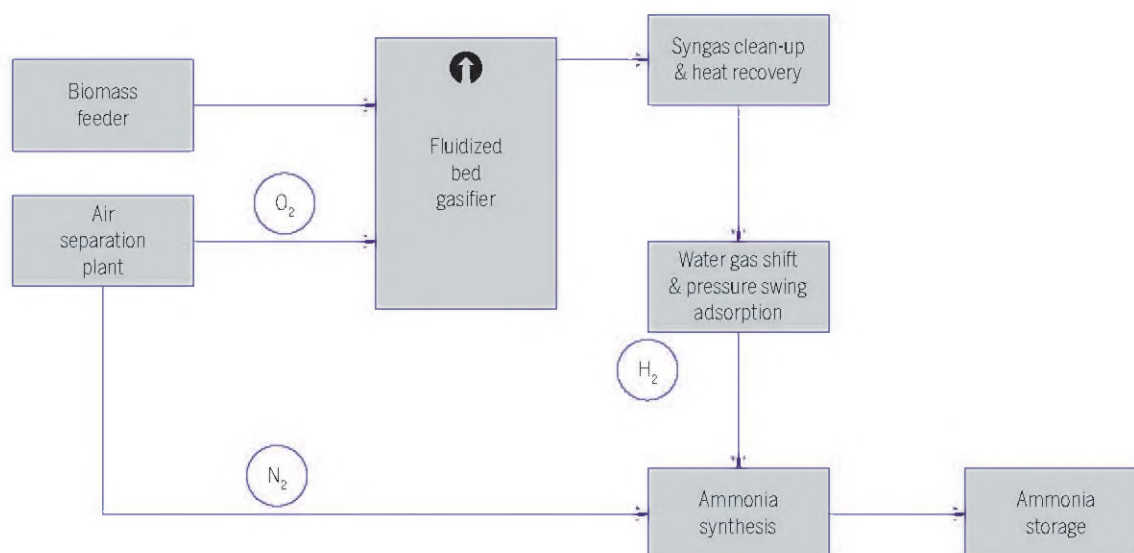
The closed-loop approach could, in theory, mean that brands no longer sell products to customers, but instead lend them materials that are returned later for recycling.

Circular design winning business model: SynGest

Renewable ammonia from biomass is a project of SynGest, a US company based in San Francisco. It will use corn cobs and other related biomass in a gasification process to produce syn gas.

The syn gas will be used as a source of hydrogen and the quantity of this gas will be optimised by the use of the water gas shift reaction. The hydrogen will be used in a version of the Haber process to produce ammonia.

Ammonia is carbon free and can be produced from nothing but air, water and renewable energy. However, today, most ammonia is produced using a carbon intensive process: traditional ammonia plants use the Haber-Bosch process with a fossil feedstock, and emit roughly two tons of CO₂ for every ton of carbon free NH₃ they produce. While there is a strong argument for using fossil ammonia as a fuel (CO₂ emissions from natural gas would be concentrated at the top of the supply chain, where they can be captured economically, instead of being distributed to a million tailpipes), a low-carbon economy needs alternative production methods to break the link between ammonia and fossil fuels.



There is an increasing movement in parts of the chemical industry towards sustainable processes. An important example is the use of waste biomass in the production of sustainable fuels such as bioethanol and biobutanol by fermentation processes.