

Climate Emergency Advisory Committee



Report of Acting Deputy Chief Executive – Transformation and Operations

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To: Climate Emergency Advisory Committee

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AGENDA ITEM

The Circular Economy

Recommendation(s)

- (a) Committee to note the key benefits and policy thinking of implementing Circular Economy principles and how this can support climate change action; as well as providing an opportunity to consider any recommendations to Cabinet on how to embed the principles within the Council.

Purpose of Report

1. This report provides an overview of both the opportunity to and importance of switching from a linear to a Circular Economy and how this is already gaining traction globally, nationally and locally.

Strategic Objectives

2. Following public consultation of South Oxfordshire District Council's Corporate Plan 2020-2024, the topic 'Action on the Climate Emergency' was one of six priority themes identified. Five of the proposed projects under this theme received a very high proportion (over 80 per cent) of respondents indicating that the project was either 'very important' or 'important' to the public. The project to 'Promote the Circular Economy (reduce, re-use and recycle), including in our waste management contracts' received an exceptionally high proportion (91 per cent) indicating that it was either 'very important' or 'important'.

3. In response to Covid-19, there appears to be a global consensus that a 'green recovery' is essential. In a previous Climate Emergency Advisory Committee (CEAC) meeting, a Green Recovery report was presented and the CEAC should note how a transition towards a Circular Economy aligns with the goals of a green recovery.

Background

4. As we respond to the challenges caused by the coronavirus pandemic, the question is no longer whether we build back better, but how? Many have called for a response to the devastating impacts of the pandemic that does not turn attention away from other pressing global challenges, such as climate change and pollution. The Circular Economy offers one solution about how to do so. By designing out waste, keeping products and materials in use and regenerating natural systems, it will create valuable opportunities for economic growth that also addresses environmental issues, create jobs and benefits society.
5. The global population is growing, consumption rates are increasing which is increasing resource extraction. This poses considerable risks to the environment as well as human health through; resource depletion, pollution of air, water and soil, climate change and a loss of biodiversity. In order to ensure that there is enough food, water and natural wealth in the future, we need to switch from a linear economy to a circular one.
6. The linear economy is based on the 'take-make-waste' approach when it comes to using resources. We extract resources from the ground to make products, which we then use and, when we no longer want them, we throw them away. The linear economy relies on using finite resources: metals, minerals, fossil fuels, land and water. Once those products are discarded, we send it to landfill or to be incinerated. During this process, we are allowing value to leak out of our natural system whilst also damaging our natural and human environment. The current system no longer works for businesses, people or the environment. To enable change, we need to transform all the elements of the 'take-make-waste' system: how we make and use products, and what we do with the materials afterwards.
7. The Circular Economy is an alternative to the linear 'take-make-waste' economy which is currently harming people and the environment; instead, it applies a 'reduce-reuse-recycle' approach. It seeks to extract the maximum value from resources whilst they are in use, then recover and regenerate products and materials at the end of their life. It prioritises making the most out of existing resources and materials through strategies such as: maintenance, cascading¹, sharing, reusing, redistribution, remanufacturing, recycling or recovery². It's a new way to design, make and use things within planetary boundaries. The Ellen MacArthur Foundations publication on the climate impacts of adopting a Circular

¹ Cascading maximises resource effectiveness by using biomass in products that create the most economic value over multiple lifetimes. This approach to production and consumption states that energy recovery should be the last option, and only after all higher-value products and services have been exhausted.

² Circle Economy, *The Role of Municipal Policy in the Circular Economy*. June 2019, p.5

Economy³ indicate that as much as 45 per cent of the greenhouse gases, as emissions, are created by the products and materials we use, which can be better managed within a Circular Economy.

8. There are three key principles for a Circular Economy:
 1. **Design out waste and pollution:** products need to be designed differently so that they can be used longer, resold, repaired, upgraded and upcycled into new products. For example, this means choosing materials that can easily be recycled and designing the whole product so that it can be taken apart.
 2. **Keep products and materials in use:** with the right designs, companies can create new systems to reuse materials and not waste the energy used to create them. For example; this means a new way of packaging products, such as Loop, a system where major brands are testing to bring reusable packaging to everyday products such as shampoo and ice cream⁴. For Ikea, it means moving to new models such as furniture rentals; so, products like bookcases and tables don't end up being thrown out after use⁵. But rather, the product is rented out to a new user which extends the lifetime value of the product, thus improving the use of the asset.
 3. **Regenerate natural systems:** for example, industrial agriculture isn't sustainable from the pollution caused by fertilizer. Regenerative agriculture include a set of farming practices that have the potential, not only to make soil healthier but to also capture the carbon in the soil. A circular approach also means capturing nutrients from food waste that is currently sent to landfills and bringing those nutrients back to farms.
9. Up to 80 per cent of a products' environmental impact is determined at the design phase⁶. However, the linear pattern of 'take-make-waste' does not provide producers with sufficient incentives to make their products more circular. And, many products fail/break down too quickly, cannot be easily repurposed, repaired or recycled and many are also made for single use.
10. By simply changing our mindset, to view waste as a design flaw and then harnessing new materials and technologies in a better way, we can ensure that waste and pollution are not created in the first place. Once adopted, this new approach will lead to making products fit for a climate-neutral, resource-efficient and Circular Economy, as well as reducing waste; sustainable products will then become the norm.

³ Ellen MacArthur Foundations, *Completing the picture: how the Circular Economy tackles climate change*, September 2019.

⁴ <https://www.fastcompany.com/90296956/a-coalition-of-giant-brands-is-about-to-change-how-we-shop-forever-with-a-new-zero-waste-platform>

⁵ <https://www.ikea.com/us/en/this-is-ikea/newsroom/ikea-will-test-furniture-leasing-in-30-markets-during-2020-pub1ae9e5e1>

⁶ <https://op.europa.eu/en/publication-detail/-/publication/4d42d597-4f92-4498-8e1d-857cc157e6db>

International perspective on a Circular Economy

11. More than 50 Global Leaders: Policymakers, CEOs and other influential individuals are highlighting the Circular Economy as a solution to 'build back better' in response to the economic impact of the coronavirus pandemic. They call on businesses and governments around the world to join the journey towards a Circular Economy, to invest in Circular Economy solutions and raise the ambition level of Circular Economy targets⁷. Further details are in Appendix 1.
12. Changing the current system to a circular one requires everyone and many things to change; it impacts businesses, governments, cities and individuals, but also benefits them all too; our jobs and our products. We are moving to a system where we design out waste and pollution, keep products and materials in use and regenerate our natural systems.
13. The European Commission has adopted a new Circular Economy Action Plan which forms a major part of the European Green Deal, Europe's new agenda for sustainable growth, further details are in Appendix 1.
14. Some of the front runners in Europe include the Netherlands, whose aim is to reduce its use of primary raw materials by 50 per cent in five economic sectors by 2030. Additionally, France has adopted an anti-waste law for the Circular Economy in early 2020, which bans the destruction of unsold goods, encourages donations and fosters secondary markets⁸.

National approach to a Circular Economy

15. In the UK, many leading businesses – including Amey, Anglian Water, Arup, Interface, JLL, Jaguar Land Rover, Lloyds Bank, PwC, Recycling Lives, Rolls Royce, Unilever to name a few – are embarking on a Circular Economy approach and are seeing economic benefits in terms of direct cost savings, new market opportunities, improved market positioning and the ability to grow in a challenging environment⁹. Further details are in Appendix 1.
16. A more 'circular' approach across the UK could increase resource productivity by 3 per cent annually, generate £10bn GVA¹⁰ and 200,000 jobs by 2030, provide new market opportunities and improve the UK's trade balance by 1-2 per cent¹¹.
17. In collaboration with C40, The London Waste and Recycling Board developed a series of programmes and projects to accelerate the Circular Economy in London. As well as launching its Circular Economy Route Map in June 2017¹²; to

⁷ <https://www.ellenmacarthurfoundation.org/news/more-than-50-global-leaders-pledge-to-build-back-better-with-the-circular-economy>

⁸ Ibid, p.6

⁹ Ibid, p.6.

¹⁰ Gross Value Added (GVA) is the measure of the value of goods and services produced in an area, industry or sector of an economy.

¹¹ Business in the Community, *Resource Productivity and the Circular Economy: The opportunities for the UK economy*, 2018, p.6.

¹² LWARB, *London's Circular Economy Route Map*, June 2017.

provide guidance for the transition towards a Circular Economy as well as recommendations for stakeholders.

18. The potential benefits are significant: London could receive a net benefit of £7bn a year by 2036 if they accelerate their transition, £2.8bn of which can be accessed by delivering the actions in the route map. The other £4.2bn of benefit comes from the UK, Europe and the world embracing a Circular Economy¹³. Further details in Appendix 1.

Applying the key Circular Economy principles to Oxfordshire

19. This next section considers how Oxfordshire are already applying the key principles of a Circular Economy but also highlights opportunities where these can be developed further. The key areas of focus are agriculture, community hubs, electric vehicles and waste management.

Agriculture

20. One-third of all food produced in Europe for human consumption is lost or wasted before people consume it¹⁴. Globally, that is around 1.3 billion tonnes every year¹⁵.
21. With 74 per cent of Oxfordshire's land being farmed (56 per cent is under cereals farming and 30 per cent under livestock grazing) and 2.7 per cent GVA contribution to the county¹⁶; the QSA report, Circular Economy in the Oxfordshire Plan 2050, makes a strong case for Agriculture in Oxfordshire to receive greater focus from a Circular Economy perspective¹⁷.
22. If systems are developed to minimise wastage of food and nutrients can be recovered from any waste created; then Oxfordshire can help sustain the agriculture sector, improve the quality of our farmland and create new businesses.
23. The Wonky Food Company based in Woodstock offers a novel solution to the waste statistic, where around 40 per cent of the food that is grown in the UK goes to waste, simply because it isn't pretty enough for the shop shelf¹⁸. The Wonky Food Company work with farmers, suppliers and retailers to collect their imperfect and surplus fruit and vegetables and turn them into relishes, which are sold in a range of stores across the country as well as available online. This applies the key Circular Economy principle to 'keep products and materials in use'; by using current food waste as an ingredient in a new product.
24. The QSA report highlights commitments that are in place within Oxfordshire to recover nutrients in food waste, sewage and wastewater in the Minerals and

¹³ Ibid, p.4.

¹⁴ QSA, *Circular Economy in the Oxfordshire Plan 2050*, September 2019.

¹⁵ <https://www.wonkyfoodco.com/>

¹⁶ <https://www.wildoxfordshire.org.uk/education/>

¹⁷ QSA, *Circular Economy in the Oxfordshire Plan 2050*, September 2019.

¹⁸ Ibid

Waste Core Strategy and the Oxfordshire Joint Municipal Waste Management Strategy. However, Oxfordshire could be doing more, particularly in applying the key Circular Economy principle to 'regenerate natural systems', with some suggested areas for exploration:

- More resource efficient agricultural practices and regenerative agricultural practices
- Use the strong technology skills to analyse and improve nutrient quality in agricultural soils – and demonstrate how its own circular nutrient recovery is effective in maintain healthy soils
- Local planning policy could cater for commercial food waste aggregation infrastructure to facilitate nutrient recovery through existing composting and anaerobic digestion facilities.
- Within urban areas, redistribution of food fit for human use could be considered within planning development (minimising the wastage of premium food)

Community Initiatives

25. Oxfordshire hosts some successful projects within the community space that harness the Circular Economy principle to 'keep products and materials in use'. However, there is opportunity for this to be replicated and expanded further across the county.
26. SHARE Oxford host the Library of Things: "our mission is to work towards creating a culture of waste prevention and towards healthy economic production and consumption"¹⁹. The Library of Things (LoT) enables people to borrow instead of buying items, particularly items that are only occasionally needed. For example, DIY tools, outdoors and sports equipment, domestic and cooking equipment.
27. The LoT improves the 'use of assets' through leasing products. This is a very different approach to the traditional behaviour of buying and owning goods; but emphasises the importance of maximising product value through sharing, rather than products being thrown out after use.
28. The LoT is encouraging and facilitating the avoidance of waste, space, money and the environment. The 'things' in the LoT are chosen and lent out an affordable rate to anyone who chooses to become a member of the Oxford LoT. They encourage members to participate in the functioning of the LoT, to create a 'community of borrowers'. To enable members to come together to borrow, share, meet like-minded people and learn about sustainability and the importance of a Circular Economy.
29. SHARE Oxford also organises Repair Cafes, where you can bring objects that need repairing and skilled volunteer repairers will fix them and even provide an

¹⁹ <https://shareoxford.org/vision-and-mission/>

opportunity for attendees to learn how to fix other items. Typical repairs offered are for sewing/darning, bikes, electronic, mechanical, sharpening, jewellery and welding repairs. Repair Cafes are another example of how the Circular Economy principle 'to keep products and materials in use' is applied.

30. More dedicated repair cafes organised by community action groups are located across Oxfordshire: Abingdon, Cholsey, Eynsham, Didcot, Chinnor, Rose Hill, Wantage. These repair cafés will also collect broken items, to then repair and sell on second-hand to reduce the amount ending up in landfill. Repair café's increase individual and community resourcefulness and resilience and helps those transition to a more sustainable lifestyle.

Electric Vehicles

31. The Circular Economy can serve the transport revolution, where shared services, e-bikes, electric vehicles (EV's) and autonomous vehicles (AVs) become standardised and common place. The circularity can be taken one step further by offering interconnected placed based mobility hubs that offer the shared vehicles, as well as other services, benefiting mobility access and social inclusion at a community scale, as well as decarbonising the sector. This is recognised at national and local levels.
32. Assets such as EV charging points, EV cars and AV shuttles are provided as a service, allowing more adaptable service provision. These assets can also be reused at the end of its first life, by capturing the materials inside, and therefore maximises the lifetime value of the asset. For example; The electric-specific lithium-ion battery has its own chain of re-use. The batteries contain significant amounts of rare materials like cobalt. Extending the electric batter's life through repairs, giving it a second life and finally recycling it are the central elements of the EV's circular economic model. Repairs and reconditioning are at the heart of the EV battery lifecycle. Used EV batteries whose charge capacity has become too low for automotive use can be given a second life, for approximately 10 more years in mobile applications or stationary energy battery storage systems. Alternatively, Carwatt, for example use these second-life batteries to convert combustion-engine vehicles (technical machines like airport baggage carts) into electric vehicles²⁰.
33. Oxfordshire is home to producers of BMW e-mini and EV charging points; this provides an opportunity for increased productivity and growth²¹. This is due to the fact items are not just sold, but provided as a service, this will create jobs in service support, repairing and remanufacturing.
34. Oxfordshire could ensure that there is adequate provision for EV infrastructure as well as meeting residential EV charging needs. This is reflected in ongoing projects within South Oxfordshire's Climate Emergency One-Year Work

²⁰ <https://easyelectriclife.groupe.renault.com/en/outlook/the-circular-economy-applied-to-electric-vehicles/>

²¹ QSA, *Circular Economy in the Oxfordshire Plan 2050*, September 2019, p.16.

Programme: Project 12 'Oxfordshire Electric Vehicle Infrastructure Strategy' and Project 13 'Park and Charge'.

35. There should also be localised consideration for EV and AC carpools and car-sharing. Vehicles are actually stationary for the majority of their lives. There is a case for making them available for trips and when needed, car sharing on a self-service basis optimises their rate of use. This also offers a more flexible and affordable way of getting around whilst also reducing air pollution. There are several electric car sharing services offered across Europe such as Zity, ZipCar, and WeShare.

Waste Management

36. Valuable resources are lost during waste management because of inefficient waste collection, consumer behaviour, lack of awareness and design complexities and hazardous substances that hamper recycling. Reducing loss of resources from waste management is key to strengthening the Circular Economy globally, nationally and locally. As previously noted, up to 80 per cent of a products' environmental impact is determined at the design phase²²; therefore, better design will significantly increase the amount of waste that can be recovered, once the Circular Economy is fully working.
37. During South Oxfordshire's Corporate Plan Engagement; the project to 'Promote the Circular Economy (reduce, re-use and recycle), including in our waste management contracts' received an exceptionally high proportion, with 91 per cent of respondents telling us that it was either 'very important' or 'important'.
38. In 2018/2019 South Oxfordshire District Council had the highest household recycling rate in the South East at 63 per cent which is the second highest recycling rate in the country (East Riding of Yorkshire Council with the highest at 65 per cent)²³. Over the last 5 years, South Oxfordshire District Council has had an average 'household waste' recycling rate of 65 per cent with the Vale of White Horse District Council at 64 per cent²⁴.
39. In Oxfordshire, we should be aiming to achieve recycling rates of up to 80 per cent, by ensuring our current systems are properly used and bigger increases may be achieved by looking at further collection changes²⁵.
40. In Oxfordshire's Resource and Waste Strategy 2018-2023²⁶, Oxfordshire Environment Partnership (OEP) have committed to:
- Working with residents to reduce the waste produced by each household and maximise the amount of waste re-used; by encouraging people to think about the products that they buy and how materials can be reused, recycled and composted.

²² <https://op.europa.eu/en/publication-detail/-/publication/4d42d597-4f92-4498-8e1d-857cc157e6db>

²³ Department for Environmental Food & Rural Affairs, *Statistics on waste managed by local authorities in England in 2018/2019*, November 2019, pp.17-8.

²⁴ *Ibid*, pp.17-18.

²⁵ *Oxfordshire's Resources and Waste Strategy 2018-2023*, p.15

²⁶ *Ibid*, pp.23-6.

- Increase reuse at the Household Waste Recycling Centres
- Encourage and promote the donation and purchase of reusable items across the county as well as supporting Community Action Groups (i.e. LoT & Repair Cafes).
- Recycle or compost at least 65 per cent of household waste by 31 March 2025
- Recycle or compost at least 70 per cent household waste by 31 March 2030
- To landfill no more than 3 per cent of household rubbish

41. By 2040, Oxfordshire's Population is expected to grow to 944,700 with over 123,500 new houses constructed. This will mean approximately 130,000 tonnes more waste generated from residents, at an additional cost of £16 million per year to collect, recycle, compost and dispose of the waste generated²⁷.

42. In order to prepare for population growth, it is essential to embed Circular Economy principles into activities and consider innovative ways to reduce, reuse and recycle more of our waste by:

- Embedding Circular Economy principles into council practices and procurements to minimise waste generation in the future
- Promote and communicate the Circular Economy to residents, staff, Councillors and lobby Government to make it an essential part of national strategy

Oxfordshire Greentech

43. In the One-Year Work Programme, Project 8 'Oxfordshire Greentech'; the council have entered into a contract to become a member of the Oxfordshire Greentech, Oxfordshire's network for low carbon and cleantech companies to grow the low carbon economy in South Oxfordshire. The Economic Development team at the Council are engaging with Oxfordshire Greentech to explore potential projects and initiatives to promote the Circular Economy within South Oxfordshire.

Risks

44. There are no risks arising from this report.

Financial Implications

45. There are no financial implications arising from this report.

Legal Implications

46. Currently there are no legal implications from this report.

²⁷ Ibid, p.17.

Conclusion

47. This report gives an overview of both the opportunity to and importance of switching from a linear to a Circular Economy and how this is already gaining traction globally, nationally and locally.
48. Looking forward, in light of the public consultation to South Oxfordshire's District Council Corporate Plan 2020-24, this report provides an opportunity for Climate Emergency Advisory Committee members to discuss the circular economy and make any recommendations in order to strengthen and align with public priority to respond to the Climate Emergency, inclusive of Circular Economy principles.