

**Additional written evidence for the Environmental Audit Committee
by Green Alliance
April 2020**

About Green Alliance

Green Alliance is a charity and independent think tank focused on ambitious leadership for the environment. Since 1979, we have worked with a growing network of leaders in business, civil society, academia and politics to stimulate new thinking and dialogue on environmental policy, and increase political action and support for environmental solutions in the UK.

This submission supplements our evidence from August 2019, drawing upon concepts and data set out in the recent Green Alliance publication, *Building a circular economy*,ⁱ and our recent thinking on waste exports as part of the Greener UK coalition response to the Environment Bill.ⁱⁱ These publications cover in greater detail topics relevant to this inquiry.

Summary

The UK requires an overhaul to its approach to design, logistics and infrastructure if it is to achieve a circular economy for electronics. Existing infrastructure is largely geared towards low quality recycling at end of life, and is woefully incompatible with a lifecycle approach to electronics that would promote a more circular economy through reduction, reuse, repurposing and the remanufacture of products.

We recommend an immediate and comprehensive analysis of existing infrastructure to inform the setting of a systems and infrastructure strategy needed for a successful transition to a circular economy. Strategic direction and investment will be required to succeed, as will involvement of producers, designers and consumers to radically alter how we design and use products. In addition to generating considerable resource savings, such measures have the potential to create new jobs, to boost the economy through innovative circular business models and to build resilience by lowering demand for scarce resources while securing supplies of secondary material.

Detailed comments

Q1. What steps are being taken to move towards a circular economy for electronic goods? How can the UK Government support this transition?

- 1.1. Historically, resource strategy in the EU and UK has largely focused on recycling targets to drive action, despite recycling representing the outer loop (i.e. the final stage) of the circular economy.ⁱⁱⁱ For example, in 2018, the headline target of the EU's Circular Economy Package was a recycling target to meet 65 per cent of municipal waste by 2035.^{iv} For waste electrical and electronic equipment (WEEE), the main targets have been on collection (65 per cent of EEE placed on the market or 85 per cent of WEEE generated from 2019 onwards), with supplementary targets for recovery and recycling.^v
- 1.2. There are currently no specific targets to drive actions higher up the hierarchy like reduction, repair or reuse, which would better focus action upstream, so that products are designed and sold with the circular economy in mind. With its new Circular Economy Action Plan (CEAP) and introduction of resource efficiency requirements through the Ecodesign Directive, the EU has signalled greater ambition in this space.^{vi} (The first set of resource efficiency/reparability standards through the Ecodesign Directive were passed for fridges, televisions, lighting, washing machines and dish washers when the UK was still a member, and it voted in favour of these measures.^{vii}) Through the CEAP, the EU has indicated it will legislate for a new 'right to repair',

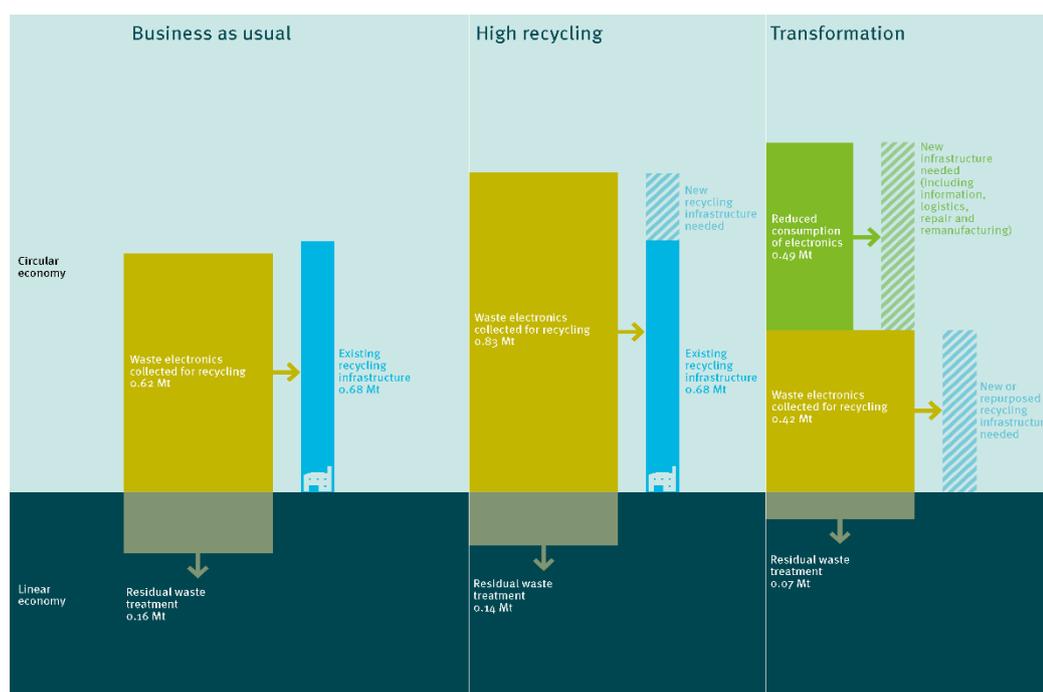
eliminate premature obsolescence, and eliminate greenwashing.

- 1.3. These proposed measures extend further than what the UK has promised to provide and certainly what it has legislated for. Although the first chapter of the resources and waste strategy (RWS) addresses the need for sustainable production – recognising the role resource efficient business models can play in creating a circular economy – concrete steps are still largely lacking.^{viii} The update to the 2013 Waste Prevention Plan, which was due in 2019, has still not been consulted on, let alone completed, though it should offer the perfect vehicle for setting out more concrete policy in this area.
- 1.4. Government should first of all assess the kinds of infrastructure and systems needed for more circular and resource efficient businesses to succeed. Other useful measures to promote circular business models include improving information at the point of sale, enhancing product guarantees, ensuring both hardware and software can be updated, and eliminating premature obsolescence. These should be backed up by ambitious policies, targeted investment, regulation and statutory targets and standards.

Q4. Why does recovering materials from electronic waste pose a significant challenge? What support is required to facilitate the adoption of recovery technologies?

- 4.1 Recovering materials is such a challenge largely because products are not designed for longevity or to allow for material and parts recovery, and collection and treatment systems are geared towards low value recycling. Electrical equipment use has been increasing in recent years, with two million tonnes placed on the market each year.^{ix} WRAP expects a further rise of 19 per cent between 2015 and 2020.^x
- 4.2 At the end of life, most of this is treated through low quality recycling that relies on shredding, leading to the loss of highly engineered parts and valuable critical raw materials. About ten per cent of electronics are reused at the end of their first life, often through informal channels, but there has so far been little effort to design products for greater durability or repair.
- 4.3 Our *Building a circular economy* report, published with the Resource Recovery from Waste programme, shows that a lack of appropriate infrastructure perpetuates the linear economy. Continued reliance on market mechanisms – explicitly promoted in the RWS – will prolong unsustainable resource use, at most delivering limited recycling facilities.
- 4.4 The report outlines three possible scenarios for a circular economy in England in 2030, focusing on the type of infrastructure that would deliver each of them. It considers a general approach and includes analysis of three specific household waste streams – plastics, textiles and electronics. We draw out the electronics analysis below:
 - 4.4.1 Business as usual: Under this scenario, England’s 2030 resource management system continues to have a low level of circularity, and most resource management in general is focused on energy recovery, with limited recycling. We assume in this scenario that the current pattern of investment will continue and, for collected electronic goods in particular, up to 80 per cent would continue to go to low value recycling, which relies on shredding. As a result, while most waste electronics and appliances that households eventually discard would be collected for recycling, the use of shredding would continue to lose valuable materials and prevent closed loop recycling.

- 4.4.2 **High recycling:** This scenario would see the country move towards a circular economy based on recycling. This would mean more infrastructure designed to tackle the outer, lower value material loops of a circular economy, and the country aiming for the EU's target of an 85 per cent WEEE recycling rate. This would mean more infrastructure designed to collect material for recycling only. In order to meet this target, the UK would need to collect an additional 150 kilotonnes of household WEEE in 2030. To process this domestically, England would need two general WEEE recycling facilities and four specialist reprocessors for specific appliances, on top of existing reprocessing infrastructure.
- 4.4.3 **Transformation:** In a truly circular economy, recycling would still be a prominent activity, but only once resource value has been maximised by other means. In our transformation scenario, industrial processes would 'put less in' to products in the first place, and better products and new business models would allow consumers to 'get more out' of fewer resources. Our modelling assumes that, by moving to a circular economy, England could halve the amount of WEEE entering the household waste stream by 2030 through improved design standards in the first instance, complemented by information, take back centres, and specialist logistics to encourage the return of items and enable collection and transportation to centres for data wiping, followed by assessment for reuse, repair and remanufacturing. Encouragement of repair activities and product service systems or sharing will also be vital to lower material use. The UK's existing infrastructure is not compatible with this model, so new systems and new or repurposed facilities would be necessary. When these better electronics reach their end of life, most waste collected would need to be sent to specialist recyclers capable of high quality disassembly (as opposed to low quality shredding), parts harvesting and closed loop recycling. England could support 17 recycling reprocessors specialising in particular appliances from households.



Graph from Green Alliance's *Building a circular economy* showing England's infrastructure requirements for household electronics in three scenarios

- 4.4. To achieve the much more desirable third scenario, the government should urgently survey the existing and planned infrastructure for all materials and waste streams, followed by an assessment of the level of circularity and resource reduction desired and a roadmap to get there. Whilst the government regularly releases information on the numbers and capacities of residual waste treatment, there is no equivalent, comprehensive list of facilities for recycling, repair, remanufacturing or reuse. This information gap makes it difficult to plan for the future of the circular economy, but could be filled through close cooperation between the Infrastructure and Planning Authority and the National Infrastructure Commission.
- 4.5. Better resource management also requires much better data on material and product stocks and flows. As such, we recommend the fast tracking of the proposed National Materials Datahub. This could provide a near real time materials tracking system and enable both industry and the public sector to become more resource efficient through a greater understanding of the availability of raw and secondary materials and products across the economy.
- 4.6. Any strategic planning of necessary infrastructure for a more circular economy must also be met with sufficient investment to realise the potential of the resultant strategy. To date, the majority of the UK's waste infrastructure funding delivered by Defra's Waste Infrastructure Delivery Programme has been earmarked for residual waste treatment, predominately generating energy from waste. There is no major government funding source for recycling infrastructure, and support for resource efficiency and the circular economy focuses on research and pilot projects, rather than infrastructure provision. Private sector infrastructure funding has also concentrated on waste disposal, in the absence of policy to drive investment towards circular solutions.
- 4.7. We recommend that the government therefore dedicates at least £400 million over the next five years to kickstart a refocus on upstream circular economy projects that deliver carbon savings through better design, durability, reuse, refurbishment and high quality recycling. We also suggest fast forwarding the delivery of the Industrial Energy Transformation Fund, to support resource efficiency in manufacturing.

Q7. What action can the UK Government take to prevent to the illegal export of e-waste to the developing world?

- 7.1. As the UK is an independent signatory to the Basel Convention, it is obliged to prohibit the export of waste to developing countries "if it has reason to believe that the wastes in question will not be managed in an environmentally sound manner".^{xi} However, the UK, like many other developed countries, has failed to live up to its international obligations.
- 7.2. Polluting waste slips through our borders in two main ways: either accidentally as contamination, or deliberately as mislabelled or disguised waste. In the case of electronics, it normally takes place through mislabelling or disguising waste, which is more malicious. Businesses seeking to avoid the costs of properly disposing of waste in this country can misdescribe mixed waste as 'green list' waste – recyclable material that isn't subject to prior authorisation from receiving countries. In some cases, a thin layer of green list material is added to the front of shipping containers to disguise the waste behind it, should it be checked.

- 7.3. A poorly resourced Environment Agency in England is unable to carry out adequate checks in any case. Government funding to the EA to protect the environment was cut from £120 million in 2010 to £52 million in 2019, a 57 per cent drop.^{xii} One of the impacts of this is that, in 2016-17, for instance, the EA only conducted 124 compliance visits to recyclers and exporters against a target of 346. The figures for unannounced inspections are much more startlingly low: in 2017-18, it only carried out three, according to the National Audit Office.^{xiii} Proper resourcing of regulatory and enforcement agencies will be key in this and other areas of environmental regulation.
- 7.4. In the case of electronics, investing in the necessary infrastructure outlined above will reduce waste arisings and also facilitate the retention of more resources in the UK electronics economy, so reducing the drive to export e-waste.
- 7.5. It should be noted, though, that it is possible to export used electronic equipment for legitimate purposes abroad. In some instances, though, when that equipment eventually reaches its end of life, receiving countries will lack the capacity to safely handle material. So, in addition to preventing the illegal export of waste, it is vital that the government dedicate overseas development budget to sharing knowledge with other countries and helping them develop their own capacity to safely handle end of life electronics. This should be done in tandem with improving design, systems and infrastructure in this country.

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ⁱ Green Alliance, 2019, [Building a circular economy: how a new approach to infrastructure can put an end to waste](#)

ⁱⁱ Greener UK and Wildlife and Countryside Link, 12 February 2020, [Briefing for Commons Second Reading of the Environment Bill](#)

ⁱⁱⁱ Green Alliance, 2018, [Completing the circle: creating effective UK markets for recovered resources](#)

^{iv} European Commission, 2018, [Circular Economy Package, Official Journal of the European Union](#)

^v European Commission, 2012, [Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment \(WEEE\), Official Journal of the European Union](#)

^{vi} European Commission, 2020, [A new Circular Economy Action Plan For a cleaner and more competitive Europe](#)

^{vii} BBC, October 2019, [EU brings in 'right to repair' rules for appliances](#)

^{viii} HM Government, 2018, [Our Waste, Our Resources: A Strategy for England](#)

^{ix} WRAP, 2017, [Switched on to value: powering business change](#)

^x Ibid

^{xi} Secretariat of the Basel Convention, 2018, [Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal](#)

^{xii} Emma Howard Boyd, Chair of the Environment Agency, 3 August 2019, [Letter to The Times](#)

^{xiii} National Audit Office, July 2018, [The packaging recycling obligations](#)