

Electronics and electronic goods

ZCS VISION	<p>Electrical goods will be produced, used and where necessary, disposed of, in the most sustainable possible way. Materials should be sourced as locally as possible, ethically produced and assembled. Goods should be to the most energy efficient standard and built to last. Ease of maintenance and repair is designed in. This includes the ease of replacing components and ensuring that warranties are not voided by repairs which involve opening up the appliance. Software that runs electronic goods has to be guaranteed support for at least 10 years.</p>			
	Sourcing/Production	Distribution/Retail	Consumption	Post Consumption
CURRENT PRACTICE (summary)	<p>Normally purchased on the basis of price, appearance, popularity. Few incentives for longevity or ease of repair. Source of materials or components is normally unknown. Production is normally in the cheapest location using the cheapest materials. Little recognition of environmental or ethical issues.</p>	<p>Cost of transport of goods from remote factories is not reflected in many unit prices due to the lack of environmental accountability. Retail is normally quite local though this is changing due to the popularity of online shopping.</p>	<p>Difficulty of repair, built in obsolescence and market incentives make consumers rapidly replace electrical goods and lead to rampant wastage.</p>	<p>Electrical goods categorised into different types of Waste Electrical and Electronic Equipment (WEEE). Five categories accepted at Household Recycling Centres (HRCs) in Shropshire that are then sent to EA Approved Authorised Treatment Facilities (AATFs) that further subdivide the WEEE into one of 13 categories. The five categories accepted at HRCs are:</p> <ul style="list-style-type: none"> • WEEE A(1): Large Household Appliances; • WEEE B (12): Cooling Appliances; • WEEE C (11): Display screen equipment; • WEEE D (13): Gas discharge lamps and LED light sources; • WEEE E (2-10): Other WEEE/small WEEE. <p>The government sets annual UK tonnage targets for each of 14 categories of WEEE designed to meet the EU WEEE Directive recycling targets. This tonnage is measured through provision of evidence notes provided by</p>

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				<p>AATFs. See government website Waste electrical and electronic equipment (WEEE): evidence and national protocols guidance for details.</p> <p>Local HRCs accept the electrical goods described but smaller items can often be included in residual waste by the public. Very little reuse takes place.</p> <p>Veolia's Flatscreen Recycling facility at Bridgnorth processes WEEE C (11) TVs & Monitors delivered to the household recycling centres by the public, which reclaims materials from old TVs etc. See YouTube video Veolia UK Flatscreen Recycling for details. Software is a big issue with electronics, many applications loose update support and can no longer be safely used.</p>
<p>BASELINE CARBON-FOOTPRINT (estimate)</p>				<p>Annual Shropshire (Shropshire and Telford & Wrekin) municipal WEEE tonnage received at HRCs and sent to AATFs for 1 April 2019 - 31 March 2020 are:</p> <ul style="list-style-type: none"> • WEEE A(1): Large Household Appliances 689.52 tonnes; • WEEE B (12): Cooling Appliances 700.26 tonnes; • WEEE C (11): Display screen equipment 296.85 tonnes;

	Sourcing/Production	Distribution/Retail	Consumption	Post Consumption
				<ul style="list-style-type: none"> • WEEE D (13): Gas discharge lamps and LED light sources 5.65 tonnes; • WEEE E (2-10): Other WEEE/small WEEE 1,404.37 tonnes

Key STRATEGIES to achieve ZCS vision	Promote purchase of sustainable products such as Fairphone or reconditioned units.	Lobby for traceability of products to be visible at sales outlets.	Encourage repair of products rather than disposal.	Ensure proper understanding of local recycling and safe disposal options.
	Raise awareness of energy efficiency categories for appliances.		Promote set up of repair centres and advertise local repair expertise.	Lobby for better recycling and collection services, particularly for small electrical goods.
	Promote awareness of longevity and ease of maintenance issues when buying products.		Encourage reuse via sites like Freegle.	Encourage upcycling of products by use of parts or change of use.

EXAMPLES of good practice or innovation	Fairphone design for longevity, easy repair, and modular upgrades. Its goal is to make the phone's hardware last as long as possible, and to provide the support to keep its software up to date. The production process is designed to incorporate fairer, ethically sourced, recycled, and responsibly mined materials in its phones – to increase industry and consumer awareness			Case study of demanufacturing (a process by which consumer appliances and computers are dismantled and valuable materials are recovered) of Monitors and flat screen TVs in Bridgnorth Shropshire Veolia UK Bridgnorth Flatscreen Recycling
				Case study of setting up a Repair Cafe

Recommended POLICIES/ACTIONS and associated carbon savings/impacts & other benefits

		Sourcing/Production	Distribution/Retail	Consumption	Post Consumption
policy/action #1	Recommended policy/action	Promote Design For Repair standards to be adopted nationally. Interesting talk here from Green Alliance , 'Fixing our relationship with stuff: the role of better design and the right to repair' shedding light on some of the related issues.	Promote the production of repair manuals for products wherever possible.	Toolkit for setting up a Repair Cafe anywhere. Steps and key document proformas are included.	
	CARBON-SAVINGS (CO2e tonnes)				
	Hard-to-quantify impacts on Carbon Footprint				Proportional reduction in volume of recycled equipment.
	Other benefits e.g. health/social benefits	Opportunities for learning about repair skills.			
	Key STAKEHOLDERS to engage	Local authorities, Volunteer organisations.			
	Potential sources of funding	Local businesses			
	Obstacles to overcome				

		Sourcing/Production	Distribution/Retail	Consumption	Post Consumption
policy/action #2	Recommended policy/action	Awareness raising publicity could be available in shops or online. Encourage sellers to provide information about material sourcing (recycled, ethical, low impact, etc), product longevity, options for repair, options for recycling at end of life.	Products will cost more - encourage suitable financing to allow consumers to benefit from the longer life of products.	Ensure repair options are clearly presented. Ensure retailers encourage buyers to return products for repair or recycling.	Ensure recycling options are clearly presented.
	CARBON-SAVINGS (CO2e tonnes)				
	Hard-to-quantify impacts on Carbon Footprint	Reduce waste material pollution			
	Other benefits eg health/social benefits	Opportunities for learning about manufacture and materials.		Educate by example about the options for reduced or alternative use of	
	Key STAKEHOLDERS to engage	Retailers, Manufacturers, Education, Government			
	Potential sources of funding	Retailers, Manufacturers		Government, local authority	
	Obstacles to overcome				

		Sourcing/Production	Distribution/Retail	Consumption	Post Consumption
policy/action #3	Recommended policy/action	Lobby for environmental standards in manufacture and distribution, covering: <ul style="list-style-type: none"> • Material sourcing (ethics, by-products, energy, waste, transport...); • Design for longevity (not built-in obsolescence); • Design for repair (removable fixings, instructions available); • Design for end of life (dismantleable, material information). 			Ensure valuable or hazardous materials are not lost.
	CARBON-SAVINGS (CO2e tonnes)				
	Hard-to-quantify impacts on Carbon Footprint	Reduced use of raw materials			
	Other benefits eg health/social benefits	Reduced environmental impact on raw material source locations			
	Key STAKEHOLDERS to engage	Retailers, Government			
	Potential sources of funding				
	Obstacles to overcome				

		Sourcing/Production	Distribution/Retail	Consumption	Post Consumption
policy/action #4	Recommended policy/action	Publicise and encourage people to use better rated appliances. https://www.nidirect.gov.uk/articles/energy-efficient-electrical-goods https://www.nidirect.gov.uk/articles/choosing-energy-efficient-products	A++ labels etc imply savings of 10% per '+' sign relative to the plain A-rating appliance. e.g. A+++ will be 30% better than A. Ratings B to G are already disappearing.	Information on usage per appliance https://www.cse.org.uk/advice/advice-and-support/how-much-electricity-am-i-usingwhilst balancing the benefits against unnecessary wastage.
	CARBON-SAVINGS (CO2e tonnes)	<p>For domestic electricity consumption, the following annual figures apply:</p> <ul style="list-style-type: none"> • Low consumption is estimated as being between 1,800kWh and 2,400kWh • Medium consumption at 2,900kWh to 4,200kWh • High consumption is between 4,300kWh and 7,100kWh. • Average 4,200 kWh <p><u>Source</u></p> <p>At 0.256 kg of CO2 per kWh of electricity (2019 figure) this suggests a potential average saving of 0.32 Tonnes of CO2 per household per annum if they changed all their appliances from A to A+++.</p> <p>This amounts to 42,000 Tonnes per annum in Shropshire.</p>			
	Hard-to-quantify impacts on Carbon Footprint				
	Other benefits e.g. health/social benefits				
	Key STAKEHOLDERS to engage	Retailers			
	Potential sources of funding				
Obstacles to overcome					