

# East Harptree Parish Council Climate and Nature Emergency Working Group Research Topic Paper: Waste & Recycling

## Environmental context

Individual Parish Councils, (including East Harptree Parish Council,) local authorities (including Bath & North East Somerset Council [B&NES] ) and overarching bodies (such as the West of England Combined Authority [WECA] ), have declared a Climate and Nature Emergency, recognising the importance of taking immediate and sustained action to reduce carbon emissions, and to ultimately reach net zero carbon. At the present time carbon usage is above levels that our planet can sustain, leading to a buildup of chemicals in the atmosphere that lead to global warming. Significant changes in policy and behaviour are required in order to slow and reverse global warming.

Carbon is necessary to life on earth and can be found in the air (carbon dioxide) within plants (glucose) and in the ground (hydrocarbons). The over release of carbon into the atmosphere is the most significant aspect of our planetary risk, and reveals the scale of planetary 'overspend'.<sup>1</sup> It can only be tackled by deliberate action to reduce our consumption and manage our waste.

According to the UK Department for Business Energy's statistics published in January 2020 (drawing on data from 1990-2018) total UK greenhouse gas emissions were 43.5 % lower than in 1990, and 2.5% lower than 2017. In 2018, UK net emissions of carbon dioxide were provisionally estimated to be 364.1 million tonnes (Mt) (with CO2 providing 81% of all greenhouse gas emissions). 5% of greenhouse emissions came from waste management activities<sup>2</sup>.



*Other includes Public, Industrial Processes and the Land Use, Land Use Change and Forestry (LULUCF) sectors (note that LULUCF acts as a net sink of emissions). The percentages may not sum to 100% due to rounding.*

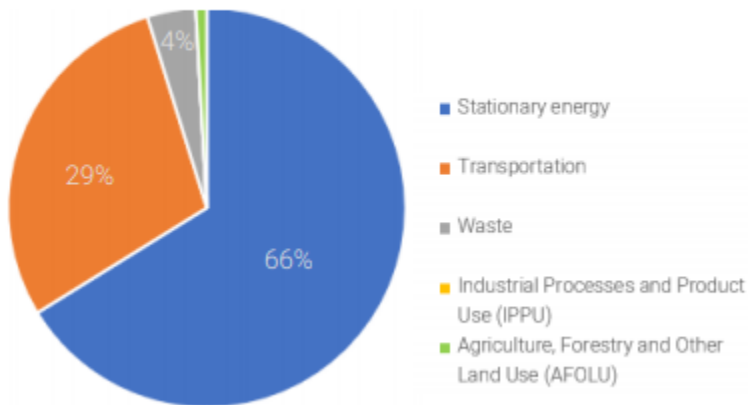
<sup>1</sup> See Appendix A for more information about carbon cycles and the planetary Carbon budget

<sup>2</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/86332/5/2018-final-emissions-statistics-summary.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/86332/5/2018-final-emissions-statistics-summary.pdf)

In B&NES the breakdown is similar.<sup>3</sup>

Chart 1: SCATTER Inventory: Direct and Indirect Emissions Summary, tCO<sub>2</sub>e



However, between 1990 & 2018, in the UK, there has been a 69% decrease in carbon emissions within the waste management sector. Whilst this is an encouraging trend it also reveals how this area has been a high contributor to existing carbon in the atmosphere.<sup>4</sup>

B&NES has created an Environmental Sustainability Partnership whose 2020 vision is as follows:

*‘Environmental sustainability is about our ability to survive and thrive into the future. Everything else that we seek to achieve – such as improved health and well-being and economic prosperity - is dependent on a clean environment and stable climate.*

*In Bath & North East Somerset, our ambition is to provide the leadership to enable the whole community to benefit from an environmentally sustainable, healthy, low carbon future that is resilient to changes in our climate. We seek to be a leading place for innovation and achievement in pursuit of these goals.’*

When last assessed, B&NES produced just under 1 Million tonnes of Carbon Dioxide emissions (from businesses, council operations, domestic housing and road transport). **This equates to 5.8 tonnes of Carbon Dioxide emissions per resident.**

B&NES now track reductions in emissions over the key areas of carbon usage:















<sup>3</sup>

<https://democracy.bathnes.gov.uk/documents/s58688/Climate%20Emergency%20Progress%20Report.pdf>

<sup>4</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/86332/5/2018-final-emissions-statistics-summary.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/86332/5/2018-final-emissions-statistics-summary.pdf)

## Energy supply delivered the largest reduction in emissions from 2017 to 2018

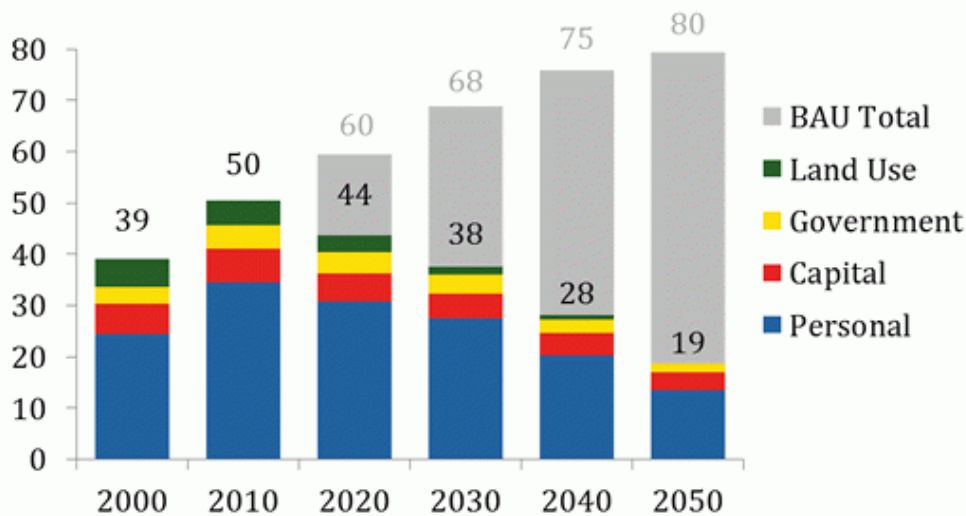
	2017-2018 % change	1990-2018 % change
Transport	 1%	 3%
Energy supply	 7%	 62%
Business	 3%	 31%
Residential	 4%	 14%
Agriculture	 1%	 16%
Waste management	 1%	 69%
Other	 8%	 89%

*The energy supply sector has accounted for around half of the overall reduction in UK emissions since 1990, at which point it accounted for 35% of all emissions in the UK. It was the largest emitting sector until its emissions fell below transport in 2016.*

On average across the UK, the wealthiest households produce more than three times the carbon emissions of the poorest 10% of households. This ratio is likely to be very similar in B&NES<sup>5</sup> Thus it is relatively affluent individuals, households and businesses that need to make the greatest life-style changes in order to achieve planetary balance.

<sup>5</sup> Bath and North East Somerset Council, Climate Emergency Study, Carbon emissions from households and citizens. Final report, September 2019 [https://www.bathnes.gov.uk/sites/default/files/sitedocuments/Environment/cse\\_citizen\\_emissions\\_report\\_bnes\\_climate\\_emergency\\_final.pdf](https://www.bathnes.gov.uk/sites/default/files/sitedocuments/Environment/cse_citizen_emissions_report_bnes_climate_emergency_final.pdf)

## 2° C Target - Global Carbon Budget (Gt CO<sub>2</sub>e)



Note: Emissions totals for 2020-2050 are based on a pathway for limiting likely temperature increase by 2100 to 2°C above pre-industrial levels. 'Personal' includes the sum of emissions of the consumption categories: housing, travel, food, products and services. BAU is the 'business as usual' forecast for total emissions. 2000 emission are known, while 2010 emissions are projected emissions.

Source: Own calculations, UNEP, IEA



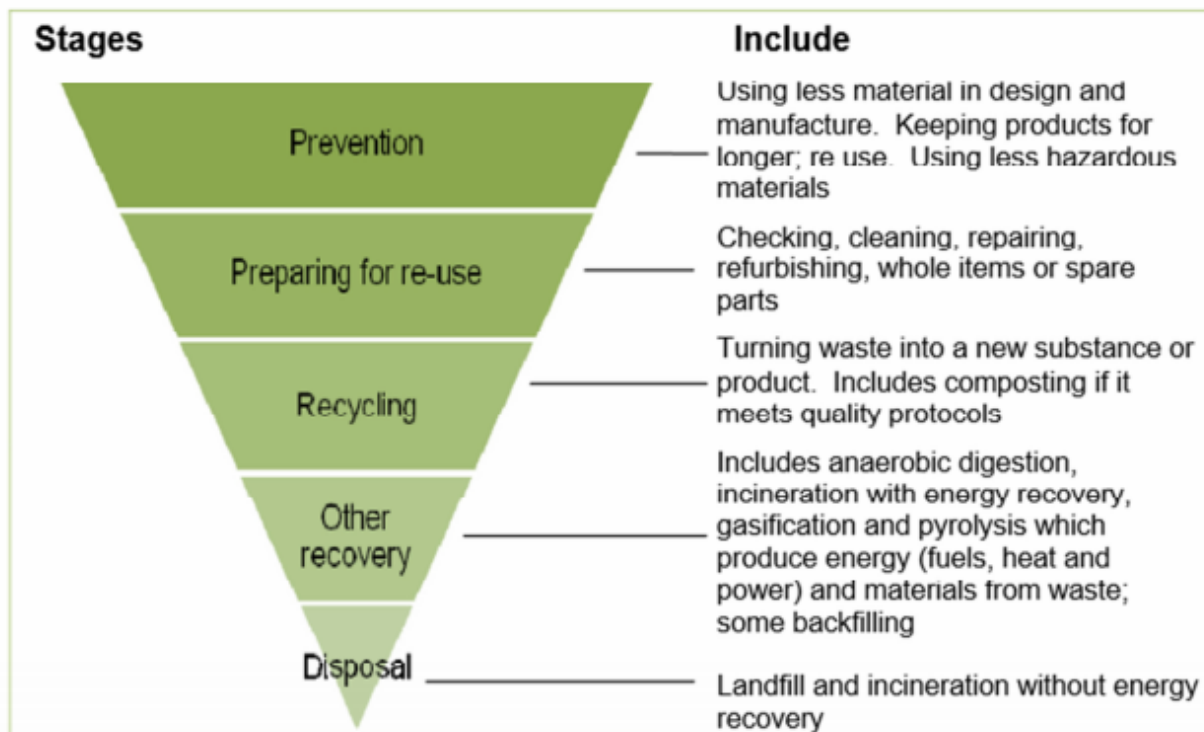
### **Waste Management Frameworks**

The European Waste Framework Directive (2000)<sup>6</sup>(EWFD) provides the overarching legislative framework governing the collection, transport, recovery and disposal of waste across Europe. It requires all EU Member States to make sure that waste is recovered or disposed of without harming human health or the environment. The EWFD's overarching requirements are supplemented by other directives that concern specific types of waste, such as:

- Electrical and electronic equipment
- Hazardous waste
- Packaging waste
- End-of-life vehicles (ELVs)
- Batteries

The EWFD introduced the principle of the waste hierarchy which guides all local authorities, including B&NES Council's waste management strategy, and this is now part of UK law. The hierarchy ranks waste management options according to what is best for the environment. Organisations that collect and manage waste must take all reasonable measures to apply the hierarchy as a priority order to the waste they handle.

<sup>6</sup> [https://ec.europa.eu/environment/water/water-framework/info/intro\\_en.htm](https://ec.europa.eu/environment/water/water-framework/info/intro_en.htm)



Further EU developments also highlight the need for a circular economy, where the life-span of an object is lengthened via re-use, rather than supporting the ‘throw away’ economy with which we are more familiar.<sup>7</sup> Fully engaging with this requires a paradigm shift, where we no longer talk about throwing things ‘away’ as there is no ‘away to throw them to without impacting on our direct or global environment. This applies to not fly tipping on the mendips or putting recyclable materials into black bag waste, but also on a larger scale to refusing unnecessary packaging, choosing local options, reducing consumption and not sending waste to other countries, that may end up polluting the world's oceans.

### **B&NES Waste Strategy**

B&NES Council has been proactively engaging with the public for many years, to encourage appropriate waste disposal and to promote recycling. This has led to significant changes in behaviour and positive carbon capture<sup>8</sup>.

In 2005, B&NES Council agreed a Waste Strategy, ‘Towards Zero Waste 2020’ which was subsequently reviewed in 2014<sup>9</sup> and set key goals to be achieved by 2020:

- “maintain and improve the service we offer;
- keep the costs of waste and recycling down;

<sup>7</sup><https://ec.europa.eu/environment/circular-economy/>

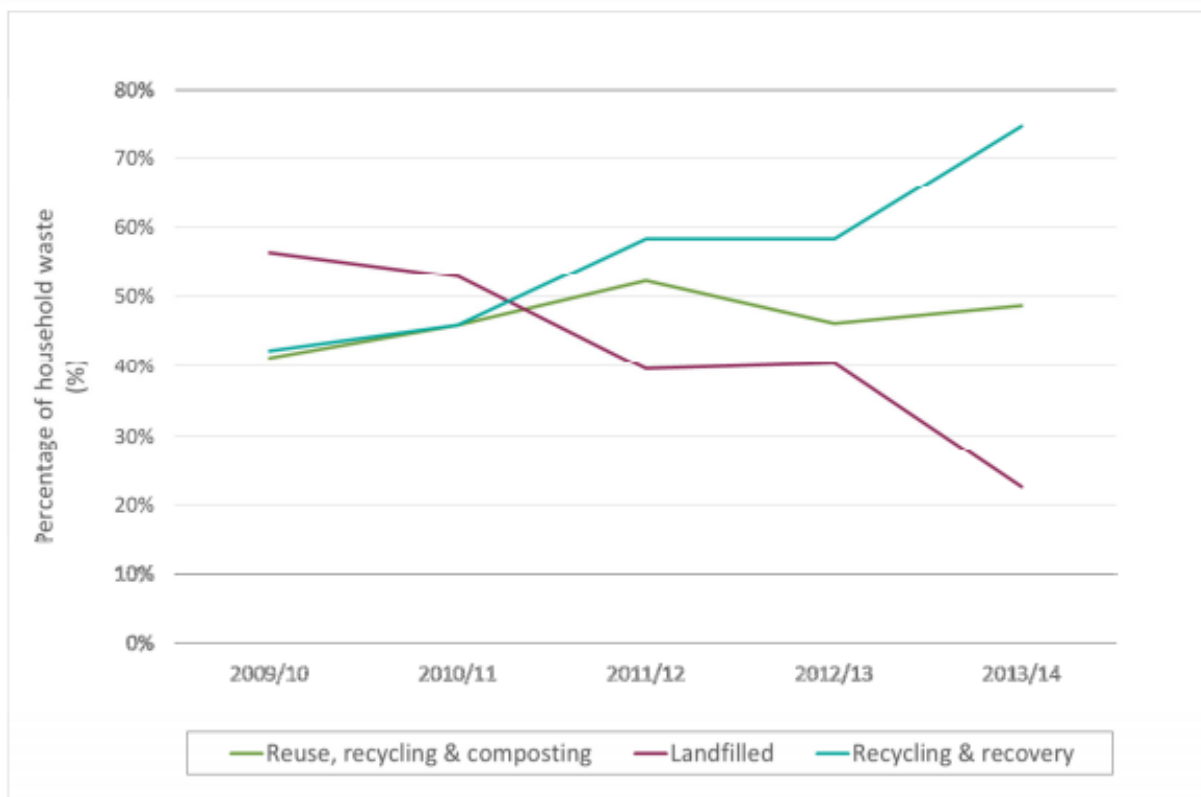
<sup>8</sup> An outline of progressive changes within B&NES can be seen in Appendix B

<sup>9</sup> [https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste\\_strategy\\_review\\_2014.pdf](https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste_strategy_review_2014.pdf)

- help our residents to prevent waste, and to reduce the amount of waste that is produced in our area;
- continue the progress we have made on recycling, and increase the proportion of waste that is recycled; and
- make appropriate use of new ways of treating the remaining waste to maximise its value and divert it from landfill.”

In 2013/14 the cost of managing waste in B&NES was £131 per household. The costs of dealing with residual (black bag) waste was increasing: between 2009/10 and 2013/14 the cost to the council of disposing or treating each tonne of residual waste increased from £64 to £85 per person. Landfill tax doubled between 2009 and 2014 (to £80 per tonne).

In B&NES administrative area the practice of waste disposal is changing as people become more aware of the issues involved, as shown in the following graphic<sup>10</sup>:



In 2019, Eunomia published a report on behalf of B&NES (covering the 7 years up to 2017/18.) Its ‘Recycling Carbon Index’, shows the total embodied carbon in the material that authorities are diverting from disposal to recycling.<sup>11</sup> Comparisons can then be made

<sup>10</sup> [https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste\\_strategy\\_review\\_2014.pdf](https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste_strategy_review_2014.pdf) page 12

<sup>11</sup> [https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste\\_strategy\\_review\\_2014.pdf](https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste_strategy_review_2014.pdf) This process converts tonnage data for each recyclable material into carbon dioxide equivalents (CO2 eq.). This can drill down to show kg CO2 saved per person, (by dividing total carbon savings (Kg CO2 eq.) by population.

across authorities, ranking them as High flyers (top 10%), Good performers (which is where B&NES Council sat in 2017-18) Mid performers and Low performers.<sup>12</sup>

**What is interesting in this calculation is that the highest performers have the most comprehensive re-cycling setups, but they are not necessarily doing the most recycling. Rather they are also encouraging people to consume less carbon and reuse materials, before considering recycling.**

In 2018-19, over 48,000 tonnes of B&NES area residents' waste was reused and recycled. All of the material collected by B&NES Council was sent for reuse, recycling, or recovery, and only 0.70% was exported overseas. B&NES Council sent 19,705 tonnes of black bag waste to landfill waste management facilities and, after all of the recyclable and compostable waste had been taken out, the remainder was either processed at 'Energy from Waste' facilities in the UK or exported for use in energy recovery in Europe. B&NES Council diverted just over 14% of the 66,906 tonnes of waste collected for landfill, with the majority of this captured waste being removed from residents' weekly bin waste. **This may indicate that there is still some work to do in educating, persuading or enabling residents to sort their rubbish.**

B&NES Council 2014 Waste Strategy Review outlined its key intentions going forward, as follows:

**“Reduce:** We will expand our campaign strategy, including our community engagement and education programme, and work with our West of England partners to maximise the impact that these initiatives have throughout the sub-region. We will continue to promote initiatives aimed at reducing waste at source, such as home composting, reusable nappies and the Love Food Hate Waste campaign.<sup>13</sup>

**Reuse:** We will seek to maximise the reuse of materials that we collect, including preparing items for reuse. We will work with third parties, and in particular charities, to further develop reuse networks throughout the area. Where we do not provide help with reuse directly, we will continue to promote other reuse facilities available through charities and commercial operators, whether based locally or accessible via the Internet.

**Recycle:** We will continue to provide a comprehensive range of recycling and composting services to households across the district, and aim to increase the range of materials we recycle as and when new markets develop. We will work with local businesses to seek to continue the increase already achieved in commercial waste recycling, in particular through the roll-out of a commercial food waste service. We will increase and widen our community engagement and communication activities to maximise awareness, participation and understanding, to ensure our services are used to maximum effect by residents.

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<sup>12</sup> The full Eunomia report is available here [https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste\\_strategy\\_review\\_2014.pdf](https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste_strategy_review_2014.pdf)

<sup>13</sup> <https://www.lovefoodhatewaste.com/>

**Recover:** Where waste cannot economically be prevented, reused or recycled, we will continue to reduce reliance on landfill for black bags and other residual waste through new treatment technologies to ensure the most advantageous outcomes, taking account of carbon dioxide emissions, wider environmental considerations and the cost to local residents.”



## **Hidden Waste**

When thinking about waste we need to consider all the processes involved in producing an item that we consume. Given our global economy this can be difficult to spot, especially as companies who are wise to the marketing potential of displaying their green credentials may fail to mention things that don't match the image they are trying to project.

The European Commission refers to this as 'Greenwashing':

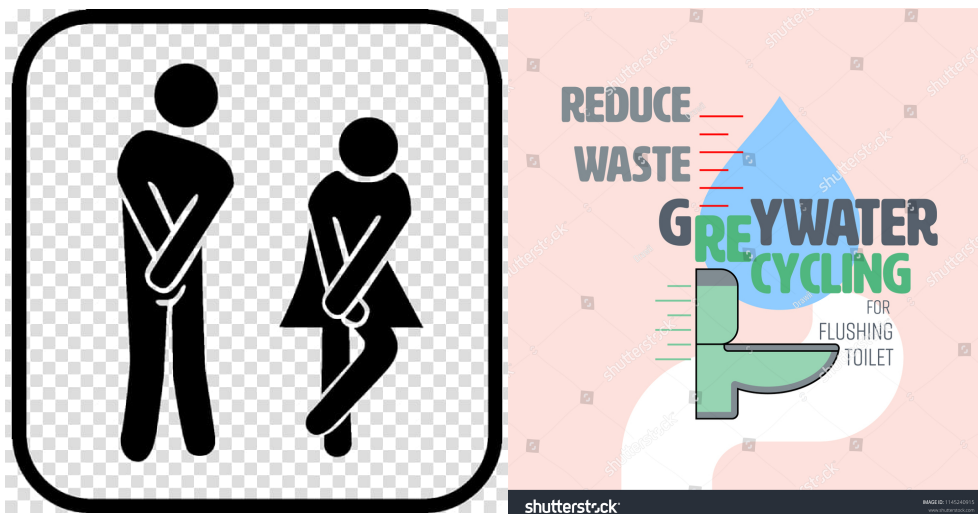
*Another issue is greenwashing – companies giving a false impression of their environmental impact or benefits. Greenwashing misleads market actors and does not give due advantage to those companies that are making the effort to green their products and activities. It ultimately leads to a less green economy.<sup>14</sup>*

A good example of this in the production of toilet rolls:

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<sup>14</sup> [https://ec.europa.eu/environment/eussd/smgp/initiative\\_on\\_green\\_claims.htm](https://ec.europa.eu/environment/eussd/smgp/initiative_on_green_claims.htm)

Greenwashing techniques: omission		
Item	Claim	Other Waste product
Certified Well Managed forests	Made from 100% virgin pulp. Paper is from certified well managed forests. Some companies also work with the Woodland Trust to plant trees.	Trees are felled releasing carbon, and it takes many years to grow an equivalent sized tree
Bamboo toilet roll	Biodegradable, using no inks, dyes or scents no trees felled.	Commercial bamboo production may require a change in land use which leads to a loss of biodiversity. Chemicals, and large quantities of water are needed to soften bamboo. As commercial bamboo is only grown in China there is a large travel footprint from China to the UK
Recycled paper	Biodegradable, using no inks, dyes or scents, made from recycled books & office paper so no trees felled	Depends on over-production of books and office paper (themselves a waste product.) Chemicals are needed to turn paper into pulp. Although some is produced in the UK, other brands may have a high travel carbon footprint.



### **Waste water**

As our climate changes, water is likely to become as valuable a global resource as oil has traditionally been. In the UK we are beginning to see the impact in terms of wet seasons with floods and dry seasons with depleted vegetation, which make it harder to grow crops reliably. Although in this Parish we are less adversely affected than other parts of the UK, or the planet, we can play our part in protecting water sources by reducing consumption and the amount of chemicals needed to purify our water.

Bristol Water, our local water provider, is wanting to reduce its carbon footprint. The company has identified key areas for improvement, in swiftly fixing water leaks and in encouraging lower levels of water usage. The largest part of its carbon footprint as a business, sits within its water pumping and treatment systems, whose function it is to ensure high water quality. Household reductions in water usage can be made through small behavioural changes (such as turning off the tap when brushing teeth, and taking a shorter shower, or a shower rather than a bath, and watering the garden from water butts rather than mains water.) Fitting water meters may also help people to bring their usage down, and can be particularly helpful for people on low incomes.

However, the most significant impact would come if homes were fitted to allow the use of 'grey water' in toilet systems. On average in the UK, only about 4% of water used is for drinking and about 30% of water is used to flush the toilet<sup>15</sup>; using clean water where 'grey water' (such as runs off from the shower) would make more sense. It may be possible for the Parish to be part of a pilot testing this, if suitable funding can be found and this would be one of the most significant contributions we could make as a Parish, to reducing our carbon footprint.

### **Local Challenges & Facilitating Factors**

Clear directives from government and the local authority offer a useful framework for local practice. B&NES Council is already a good performer in terms of waste management.

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<sup>15</sup> Statistic from 'Reclaim Your Sh\*t' by Sarah Poppy Jackson Break Down Press 2019

Through anecdotal evidence from our own observations and conversations, it appears that most East Harptree residents are quite engaged with black bin waste reduction and the B&NES recycling collection system. The recent success of introducing refillable milk bottles into the Community Shop also indicates that behavioural change may already be primed to happen, given the right facilitating factors. The Community Shop is also considering further measures they might take to reduce packaging. This underlying receptiveness to reducing household waste provides a good starting point for the Parish Council to engage a wider cross section of residents in reducing waste and to shifting thinking further to reducing consumption and sharing resources within the community.

### **How might we improve our practice in East Harptree Parish?**

The East Harptree C&NEWG's long term aim is to drastically reduce the amount the Parish sends to landfill **and** recycling. The ultimate ideal is Prevention. i.e. reducing the number of items we purchase and consume and the amount of plastic, cardboard, food, water etc we currently discard from our consumption. The Parish Council could use existing materials referenced in this report to encourage behavioural changes.

### **Specific areas that could be targeted:**

#### **1. Refuse**

As consumers we have the power to influence producers by **only** buying products that are:

- Produced in sustainable ways
- Produced locally (avoiding the waste impact of travel)
- Packaged responsibly (e.g. avoiding plastic, choosing bulk buying to use in refillable containers)
- Never packaged (e.g. buying fruit and veg via reusable boxes from the Community Farm)

Parishioners need accurate information, and an awareness of 'greenwashing' techniques in order to make sustainable choices.

#### **2. Reduce**

The less we consume, the less waste we produce, this can equate to:

- Water and energy consumption
- Food purchasing and consumption
- Plastic consumption

Also, if fewer items are put into the waste system we may be able to reduce the frequency of waste collection and thus save money and pollution caused by waste collection vehicles. In particular we could consider:

- Buying clothes second hand and less frequently
- Opting to wash clothes less and use eco friendly cleaning products
- Fitting water metres to notice present water consumption
- Turning down heating and wearing more clothes

### 3. **Reuse**

Many items can be reused and repurposed within the home, if thought about creatively, this could include:

- Using refillable products (e.g. milk/proprietary goods such as washing liquids, but also the potential for 'scoop' bins in the Community Shop, taking your own container to buy meat, fish or delicatessen items)
- Repurposing materials (e.g. yogurt pots for plant pots, building pallets for garden structures)
- Creating a 'library of things' where commonly used tools and lent out within the community
- Creating a repair cafe within the community, where people can learn techniques for repairing items rather than replacing them

Whilst Ecobricking, (filling plastic bottles with plastic waste so that they can be used as 'bricks' to build structures such as benches or raised beds) can only be seen as a temporary measure for reusing plastic, it can be a useful activity for people to engage with whilst they transition away from plastic consumption, in particular to make them aware of, and take responsibility for, their own plastic waste.

### 4. **Recycle**

Recycling is the process of converting waste products into new materials and objects. It uses more energy than reducing or reusing, so needs to be understood as a third step, only used if 1 & 2 are not possible. Recycling enables raw materials to be processed into new useful materials and can thus prevent the need to acquire new raw materials, thereby reducing energy usage, air pollution (from incineration), and water pollution (from landfilling). We can increase people's awareness of B&NES Council recycling services, both via the doorstep collections and at recycling centres

### 5. **Recover**

We could consider creating individual awareness about home composting and engage in bulk ordering of well rotted manure from local farms and horse-owners to enrich compost for village use. This could be via village events, information dissemination and the sharing of links and webinars to increase skills.

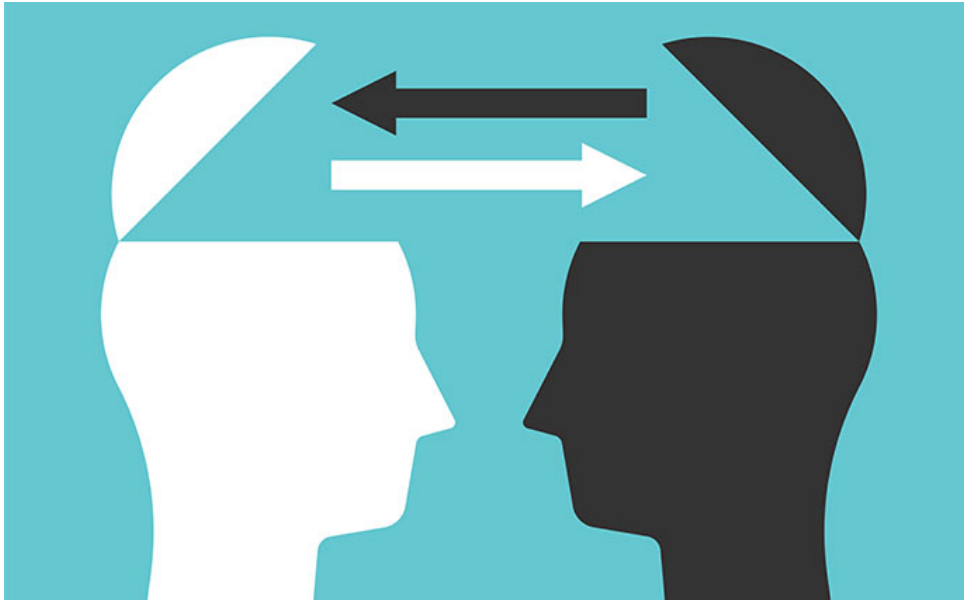
We could ensure people are aware of newer technologies such as the use of anaerobic digestion.

### **Possible solutions for East Harptree Parish**

We need to facilitate behavioural changes in our patterns of consumption and waste management in the Parish, in such a way as to be easy for individuals to adopt the suggestions made. Relative affluence in the Parish means that people are more able to consume according to want rather than need and may be drawn to consumption of high carbon footprint items (such as goods and services 'out of season' shipped long distance and using transportation that is itself polluting.) Fast-paced lifestyles may mean people are more inclined to shop for convenience rather than environmental benefit, and may

mean there is limited capacity for processes that require too much of them in terms of time. However, this same relative affluence may enable people to choose organic, local and Fair Trade products, and the recent experience of pandemic lockdown may also mean that certain changes towards home working and using local suppliers, may continue as habits in the longer term. For some Parishioners, increased unemployment post-pandemic may squeeze family budgets, so emphasising the financial benefit of changes behaviour may have an increased value.

### **Priority 1: Information Exchange & Awareness Raising**



**We recommend the Parish Council creates a Climate and Nature Emergency Communication Working Group** to explore the range of methods (information on the Parish website and social media, face to face and virtual village meetings, webinars, vlogs and blogs) to disseminate useful information and to allow people to share knowledge and expand their understanding of effective waste management.

In particular the Parish Council might seek to increase individual's awareness in

- The value of reducing consumption
- How to manage waste effectively
- Patterns of consumption and waste that can be achieved easily (e.g managing water and energy usage, repurposing existing resources, sharing resources to avoid over consumption, checking which waste is reusable and recyclable, crushing cans, etc.)

**Reason:** We need to build sustainable behaviour through sharing existing knowledge and offering clear information about best practice, to diverse groups within the Parish, through a range of media.

## **Priority 2: Partnership working to educate the next generation**



**We recommend the Parish Council supports the bringing together of a suitable team who can create an education plan** in partnership with the local secondary, primary and pre-school and B&NES, so as to impact on the next generation. This could work well with the already established Climate Action Team in Chew Valley School and the Climate Action Schools Network managed by B&NES and could feed into the Local Plan and Joint Waste Strategy.

**Reason:** For really sustainable change within our Parish we need to build sustainable behaviour in future generations, through awareness raising and education. There is some evidence that increasing children's understanding, can also prompt their parents to make changes in their behaviour. Good practice in this area already exists in B&NES and by actively participating with others we may learn new information for the benefit of our parishioners

### **Priority 3: Building partnership working**



**We recommend that the Parish Council supports the creation of partnership working, with local businesses and interest groups, to encourage good practice, waste reduction and increased staff and customer awareness.** This could include working with the Community Shop, Waldegrave Arms, Solo Hairdressers, local farmers and other local businesses to encourage the reduction in

- harmful chemical release,
- packaging,
- goods travel footprint,
- plastic consumption by pushing back to suppliers.

An increase in

- the use of refillable resources
- sustainable methods of production
- Local purchasing

This may help people swap out shampoo bottles for shampoo bars, throw away nappies for washable ones or plan meals with less waste etc.

The Parish Council could support the work of the Chew Valley Area Forum Climate and Nature Emergency Working Group in forming valley wide partnerships to reduce waste.

The Parish could support a local pilot study in using 'grey' waste water for flushing toilets, and installing water meters, thus raising awareness, reducing household bills and drastically reducing water consumption.

**Reason:** We are more likely to embed good practice into the community if sustainable goods are locally available, and this in turn will help create markets for sustainably sourced goods and services, this supporting local businesses.

## **Priority 4: Building community action**



**We recommend that the Parish Council encourages and supports community activities that offer sustainable consumption, including, if appropriate, using their CIL Funding and legal powers to incentivise behaviour.** This could include

- introducing swap and share systems and community owned projects (e.g. orchard/allotment) to increase our self sufficiency as a community and to prevent food wastage in the village.
- supporting local buying groups to enable reduction in the number of commercial vehicle movements to and from the village.
- encouraging organic gardening and increasing consumption of local organic produce, thereby avoiding pollution associated with insecticides and moving goods across the country (e.g. Community Farm veg boxes).
- introducing recycling points for shoes, clothes and the use of Facebook Groups such as Chew Valley Swap and Share or the creation of community swap, share and mend groups.
- the creation of a library of things (that people could book out and share) for commonly used household and garden items.

All of the above would have the co-benefit of increasing community building and reducing rural isolation.

**Reason:** When engaging people in community projects there are considerable co-benefits in waste and consumption reduction and in bringing people together to mitigate against social isolation, whilst supporting more sustainable living.

### **Conclusion**

Waste management is not simply about how we sort our rubbish, but includes broader considerations of our habits in terms of consumption. We are increasingly aware that there is no 'away' to throw things to and we need to act responsibly to tackle the Climate and Nature Emergency. There are some useful resources already available to help raise awareness in our community, to encourage best practice, and a perceived willingness to

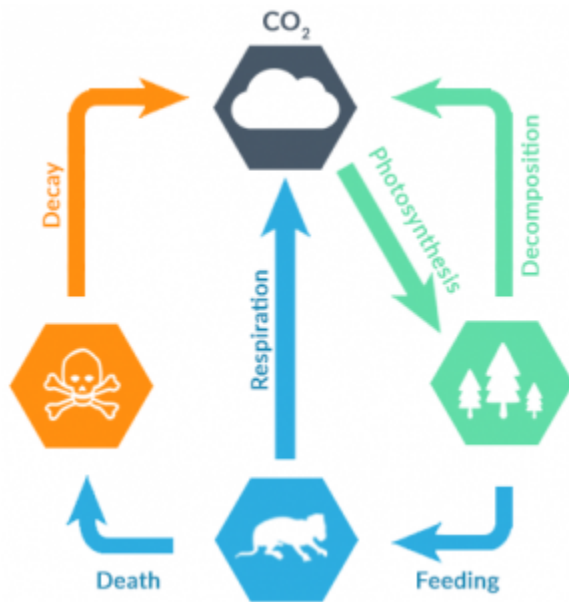
engage in this dialogue. As a close knit community we have the opportunity to pull together around sustainable changes in behaviour in ways that may also enrich our community further.

**Jackie Head**  
**January 2021**

Original Draft  
Paul Cullen, Jackie Head & Kate Gillingham  
May 2020

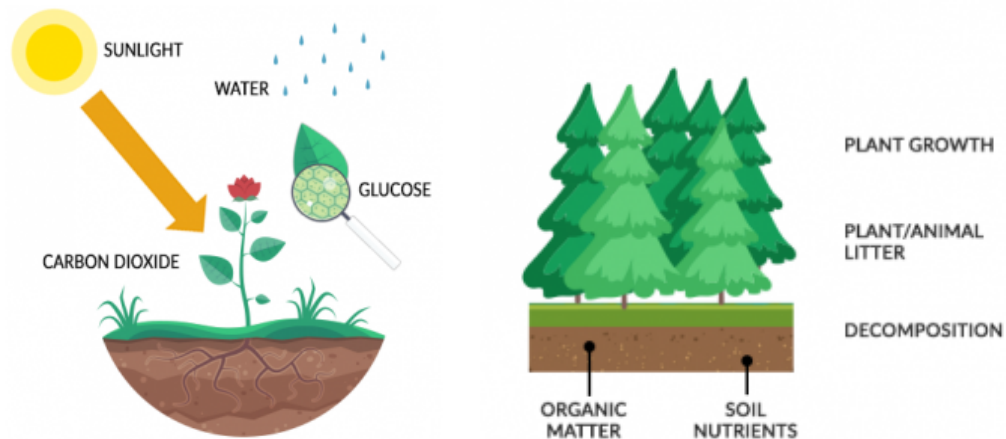
## Appendix A: Understanding the Carbon Cycle & Carbon Budget

Carbon usage is best understood as long term and short term carbon cycles. In long term cycles plants and animals break down and are compacted over millions of years, and carbon is captured within oil, gas and coal (hydrocarbons). When these are extracted and burnt in combustion processes (such as fuel in cars and planes & power in gas & coal) then the carbon is released beyond the planet's ability to use it, so it builds in the earth's atmosphere and becomes a pollutant.



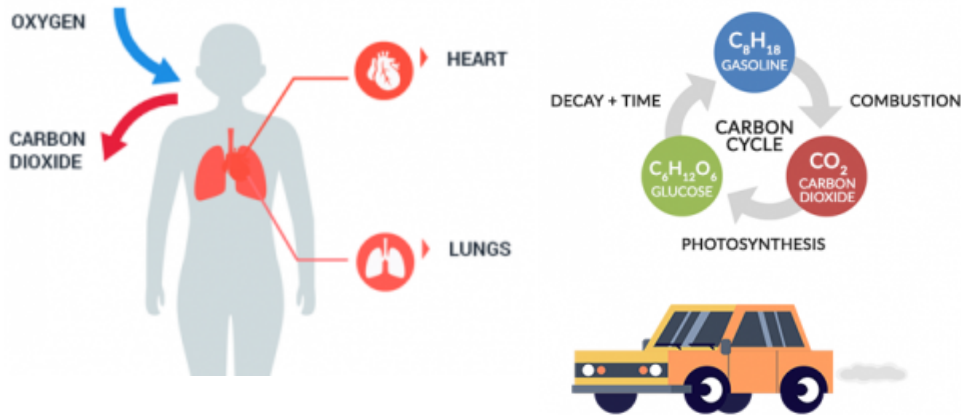
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In short term cycles human and ecosystem activity in the immediate present impacts on natural processes regulated by photosynthesis, decomposition, respiration and combustion.<sup>17</sup>



<sup>16</sup> <https://earthhow.com/carbon-cycle/>

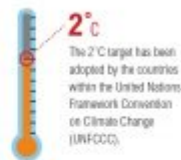
<sup>17</sup> <https://earthhow.com/carbon-cycle/>



How much carbon the earth can tolerate is expressed as a carbon budget:

## WHAT IS THE CARBON BUDGET?

The carbon budget is the estimated amount of carbon dioxide the world can emit while still having a likely chance of limiting global temperature rise to  $2^\circ C$  above pre-industrial levels. The international scientific community estimates this budget to be 1 trillion tonnes of carbon (1,000 PgC).



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[www.wri.org/ipcc-infographics](http://www.wri.org/ipcc-infographics)

WORLD RESOURCES INSTITUTE

Committee for Climate Change have just published their 6th Carbon Budget (9th December 2020) which sets recommended targets for carbon reduction<sup>19</sup>

<sup>18</sup> <https://www.21stcentech.com/carbon-budget/>

<sup>19</sup> <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

## **Appendix B. B&NES progress in waste management**

**In 2009**, B&NES Council introduced a weekly cardboard collection and made it possible to recycle a wider range of household plastics as part of the kerbside recycling system;

The recycling rate in B&NES increased from 41% in 2009/10 to 52% in 2011/12.

**In 2010**, B&NES introduced weekly food waste collections and nearly 60% of BANES residents were using that service in 2014;

**In 2011**, the West of England Joint Waste Core Strategy (JWCS) came into effect. The JWCS is a Development Plan Document (DPD) that explains the vision and objectives for sustainable waste management. It contains development management policies and supersedes most of the previously adopted Local Plan waste management policies. The WFD waste hierarchy was taken into account in the development of the JWCS.

It identified two potential residual waste facility sites in the Bath and North East Somerset area; the former Fuller's Earth Works in Bath and Broadmead Lane in Keynsham.

**In 2012**, B&NES introduced kerbside collection of small Electrical and Electronic waste (WEEE) for recycling;

**In 2012/13**, the recycling rate in B&NES fell back to 46%, (when a clarification from Defra re-classified some wastes, and B&NES also changed the way it treated waste wood), it rebounded to 49% in 2013/14.

**In 2013**, B&NES launched its new trade waste collection and recycling service to provide an improved service for business.

**In 2014**, B&NES provided householders with a weekly collection of recycling, food waste and rubbish and a fortnightly charged-for collection of garden waste. Across the district, the Council provided three recycling centres for larger unwanted or broken household items, and extra recycling or rubbish. It also offered a number of other charged-for services such as bulky waste collections, trade waste and recycling collections (including collections from schools).

In 2014, B&NES waste disposal and treatment relied on waste treatment and disposal facilities outside the district at the New Earth's Mechanical and Biological Treatment (MBT) plan in Avonmouth as part of the West of England Partnership. This enabled economies of scale by using facilities that are shared with other authorities and commercial waste collectors, giving B&NES access to competitive prices. In addition B&NES had its own contract with New Earth for treatment of residual waste so that material could be recovered from it for recycling and composting, whilst the remainder could be used as fuel to generate electricity.<sup>20</sup>

In 2014 B&NES contracted Eunomia Research & Consulting to review its Waste Strategy.<sup>21</sup> There is likely to be a significant development in waste management over the next 5-10 years but at present there is no published material relating to this.

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<sup>20</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/470430/Variation\\_Notice.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470430/Variation_Notice.pdf)

<sup>21</sup> [https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste\\_strategy\\_review\\_2014.pdf](https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste_strategy_review_2014.pdf)

### **Appendix 3: Studies and Reports**

Earth How have produced a very simple illustrated summary of the short term and long term carbon cycle

<https://earthhow.com/carbon-cycle/>

Towards Zero Waste 2020

[https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste\\_strategy\\_review\\_2014.pdf](https://beta.bathnes.gov.uk/sites/default/files/2019-10/waste_strategy_review_2014.pdf)

Introduction to the EU Water Framework

[https://ec.europa.eu/environment/water/water-framework/info/intro\\_en.htm](https://ec.europa.eu/environment/water/water-framework/info/intro_en.htm)

Directory of B&NES reports

[https://beta.bathnes.gov.uk/policy-and-documents-library-results?f%5B0%5D=service\\_taxonomy%3A865](https://beta.bathnes.gov.uk/policy-and-documents-library-results?f%5B0%5D=service_taxonomy%3A865)

Committee For Climate Change 6th Carbon Budget December 2020

<https://www.theccc.org.uk/publication/sixth-carbon-budget/>

### **Annex 3: Existing Waste services**

Detailed data about waste and recycling in BANES in 2018-19 can be found here

[https://beta.bathnes.gov.uk/sites/default/files/2019-10/recycling\\_end\\_use\\_register\\_2018-19.pdf](https://beta.bathnes.gov.uk/sites/default/files/2019-10/recycling_end_use_register_2018-19.pdf)

Directory of home recycling Items

<https://beta.bathnes.gov.uk/rubbish-and-recycling>

Recycling A-Z <https://beta.bathnes.gov.uk/recycling-z>

Types of waste generated by EH include non-recyclable domestic waste (collected fortnightly), green waste (collected fortnightly) and all the weekly items collected – food waste, cardboard and all the items you can put in the green boxes -

#### **PAPER**

Newspaper, magazines, catalogues, directories, Yellow Pages, junk mail, white paper and white envelopes, white based wrapping paper, greetings cards and small amounts of shredded paper

#### **PLASTIC BOTTLES and PLASTIC FOOD CONTAINERS**

Any plastic bottles (including drinks, shampoo and bleach bottles - rinse, squash and replace the lid), plus pots, tubs and trays used to hold food. No black plastic thanks

#### **GLASS BOTTLES and JARS**

Please rinse - labels and lids can be left on

No broken glass or other types of glass (eg Pyrex, tumblers and window panes - they do not melt at the same temperature as bottles and jars)

#### **CANS, TINS and AEROSOLS**

Including large biscuit tins. Please rinse tins (labels can be left on) and squash

cans if possible, to make more room on our vehicles. Please remove lids from aerosols and make sure they're empty

#### FOIL

Clean aluminium foil (eg bottle tops, take away trays). Please squash together. No silver plastic (eg crisp packets - if you scrunch it and it springs back, it's not foil) and no paper backed foil thanks.

#### SMALL ELECTRICAL ITEMS

Including small electronic devices (eg cameras), small electrical personal care (eg hairdryers), small electrical appliances (eg kettles), small DIY and garden electricals (eg drills) - Please place your electrical items in an untied plastic carrier bag next to your green recycling box

No microwaves, large printers and anything else that is too big to fit inside a plastic carrier bag

#### CLOTHES, SHOES and ACCESSORIES

##### OTHER ITEMS:

Batteries - all types - once you have collected enough, please put in a small bag at the top of your box

Car batteries - please place next to your box

Engine oil and oil filters - in sealed engine oil containers. Drain and wrap oil filters in plastic bags to avoid leaks

Mobile phones - including batteries and chargers

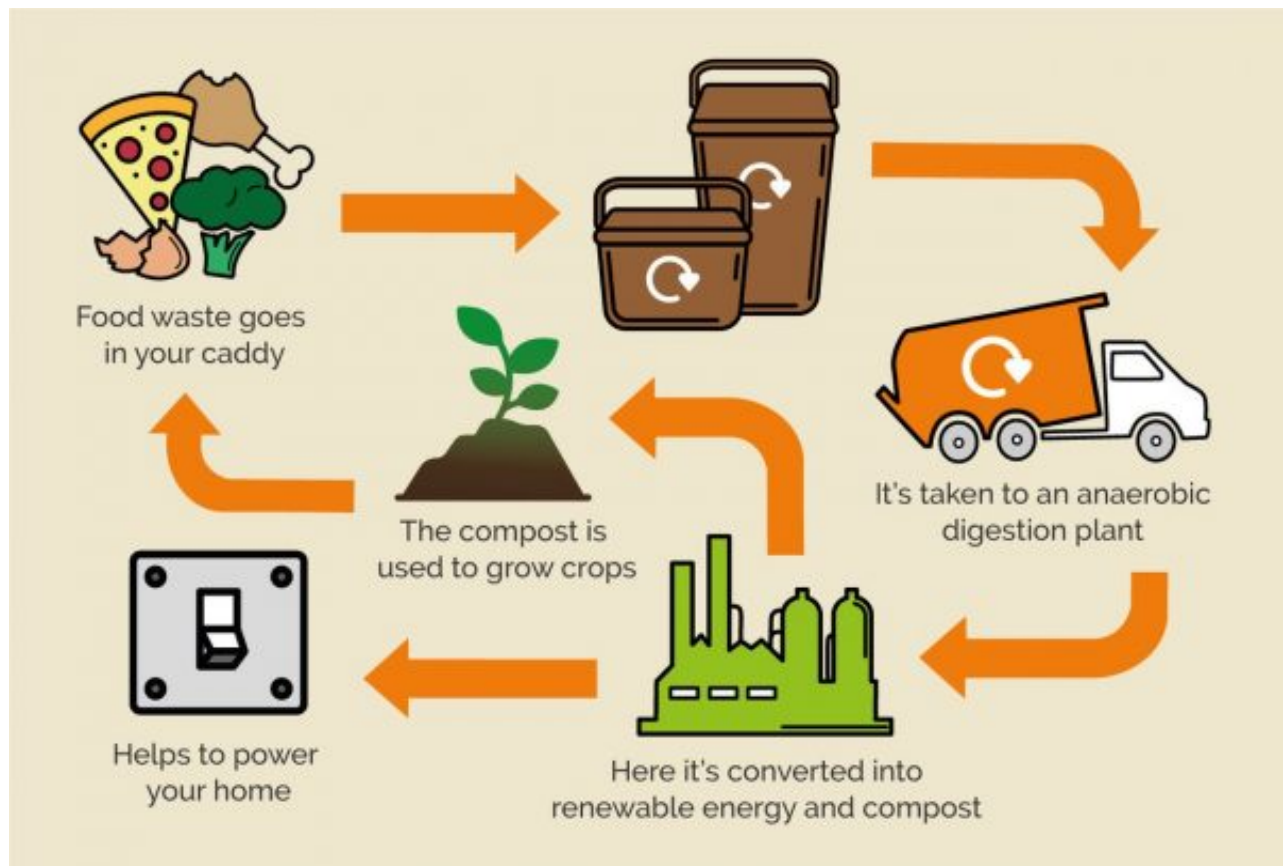
Printer ink cartridges - leave in original packaging where possible or use the packaging from the new cartridge

Spectacles - unbroken

#### Annex 4: Examples of best practice

**Somerset Waste Partnership** have an impressive track record in terms of comprehensive services and behavioural change. They have made good use of simple infographics and key messages to get ideas across.

<https://www.somersetwaste.gov.uk/> They have created a useful Q&A about plastics <https://www.somersetwaste.gov.uk/wp-content/uploads/2019/08/SWP-Plastics-QA-enquiries.pdf> and a plastic pledge scheme <https://www.surveymonkey.co.uk/r/B2DZ9BH>



And used the slim my waste campaign  
<https://www.somersetwaste.gov.uk/slimmywaste/>



**Bristol Waste Company** have a good track record for public engagement, explaining complex ideas in straight forward ways:

<https://www.bristolwastecompany.co.uk/whats-happening/bristol-waste-nothing-challenge/resources/what-zero-waste/>

They provide support and resources through the #wastenothing campaign:  
<https://www.bristolwastecompany.co.uk/whats-happening/bristol-waste-nothing-challenge/resources/>

They ran an interesting trial of 'Slim My Waste' which led to an 87% increase in food waste collection

[https://www.circularonline.co.uk/news/food-waste-trial-success-bristol/?gclid=Cj0KCQjw7qn1BRDqARIsAKMbHDZH1bPXjZ17AnyX\\_vnk2jQ\\_xVvw5ok-IfkyKj131guXBJvmqsMiJgYaAhyxEALw\\_wcB](https://www.circularonline.co.uk/news/food-waste-trial-success-bristol/?gclid=Cj0KCQjw7qn1BRDqARIsAKMbHDZH1bPXjZ17AnyX_vnk2jQ_xVvw5ok-IfkyKj131guXBJvmqsMiJgYaAhyxEALw_wcB)