Recycling reset

How England can stop subsidising waste

green alliance...

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By Jonny Hazell and Jasper Keech

Green Alliance
Green Alliance is a charity and independent think tank focused on ambitious leadership for the environment. We have a track record of 35 years, working with the most influential leaders from the NGO, business, and political communities. Our work generates new thinking and dialogue, and has increased political action and support for environmental solutions in the UK.

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Contents

Summary

The EU has been the driving force behind England's policy on resource management and the multi billion pound industry that has emerged to support it. But ambivalent implementation of EU policy has resulted in an inefficient approach to household waste management. Instead of addressing this problem, the public money spent on recycling is effectively subsidising poorly designed products and inconsistent collections, and fails to secure the economic benefits of a reliable source of recycled raw materials for industry. But, with Brexit, there is an opportunity to take a new look at the household recycling system and think about what makes economic sense rather than just what is necessary to meet targets.

"Public money spent on recycling is effectively subsidising poorly designed products and inconsistent collections."

In this report, we highlight innovative approaches from around the world. We draw on experience in Belgium, where dealing with waste packaging costs 25 per cent less per person than in England. We show how France rewards its manufacturers for designing less wasteful, more resource efficient packaging. And we identify how concerted support for plastic recycling in California has led to a five fold increase in the amount of plastic recycled in the state rather than being sent overseas.

We make three recommendations, based on this research, to guide a new recycling policy for England post Brexit:

1/
Reward responsible companies
Producers should be rewarded for designing less wasteful packaging, using recycled materials and getting their customers to recycle as much as they can. Companies that do none of these things should pay more.

2/
Producers should help to pay for recycling
Because producers have the greatest ability to influence the design of products and, therefore, the net costs of recycling systems, they should take responsibility for the majority of the collection system's costs.

3/
Make the system fairer for local authorities

As recommended above, to encourage local authorities to adopt more consistent, cost effective recycling collections they should have a greater share of their costs covered by producer payments. Also, to lower the costs for both producers and local authorities, households should be encouraged to make best use of the systems, so local authorities should be able to charge more to those households that waste more.

These actions would lead to a better system for all, in which businesses, householders and local authorities could work together to reduce waste and increase recycling. Importantly, it would ensure a more equitable distribution of responsibilities and increase recycling rates, while reducing the overall cost of running the system.

1 A rationale for new resource policy in England

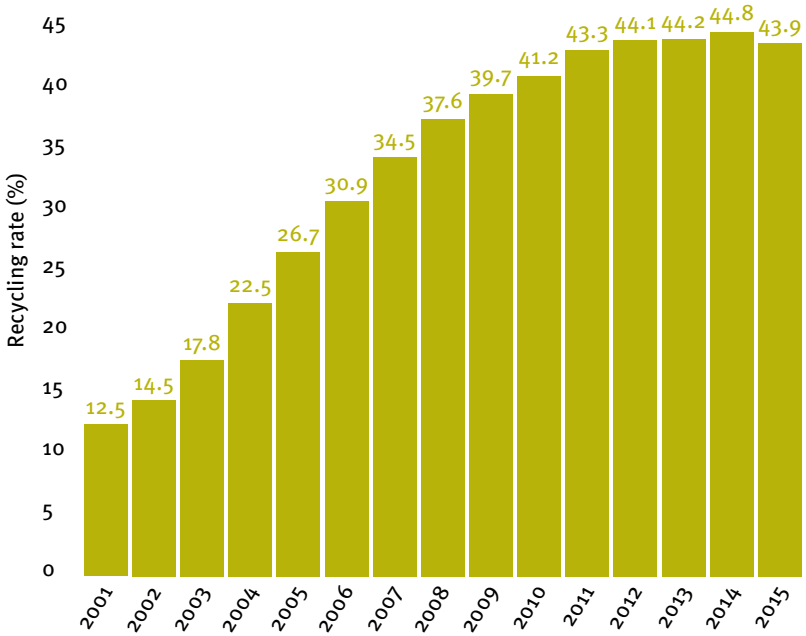
Unlike other advanced manufacturing nations, England has largely managed without formulating its own strategy for waste and resources, relying instead on the European Union as the source of policy. Developing a robust alternative approach in the event that the UK leaves both the EU and the single market will be a complex task. Our manufacturers have counted on the access to resources that single market membership provides, whilst UK citizens have benefited from a range of EU directives that have delivered better designed products and reduced the environmental impacts of waste.

One area that has been especially influenced by European policy is the management of waste materials produced by households. Almost all of the investment in household recycling systems over the past 20 years, from reprocessing plants to sorting facilities and collection vehicles, has been underpinned by EU legislation, particularly the Waste Framework Directive. Core to this has been a series of recycling targets, the latest of which has set a 50 per cent target for the UK. This has driven significant increases in recycling since the turn of the millennium.

Unlike Wales and Scotland which have ambitious resource management strategies, policy in England has stalled, and recycling levels have stopped rising. The way the Westminster government has chosen to implement many EU waste rules has left a patchwork of laws, leading to inefficient waste and recycling collection and processing systems, and product designs that do not help. This has been due to a mentality which has sought to comply with the letter, rather than the spirit, of the EU directives.

Even with half-hearted policy support a significant resource management sector has emerged which contributes at least £6.8 billion to the UK economy, and as much as £41 billion, if activities like repair, reuse and leasing are included.[1] So an approach focused on the greater opportunities that exist promises even more economic benefit. This will be all the more important post-Brexit, as increasing resource efficiency and the supply of recycled materials would help to reduce the trade deficit and mitigate the impact of a weakened currency on import costs. Recycling and waste prevention are also popular with the public, so the government has a mandate to act.[2]

Recycling rates in England[3]



Principles for a successful recycling strategy

Leaving the EU should not result in increased waste and inefficiency. Nor should it deprive manufacturers of valuable secondary raw materials. In this analysis we focus on one sector that will be particularly vulnerable to an abrupt move away from the EU led approach: household waste recycling. We draw on international examples and make the case for new policy in England grounded in three core principles. This would reduce manufacturers' exposure to expensive imports, increase the incentive to innovate and drive a higher value, higher quality recycling sector. The three principles are:

Public subsidy should not support inefficiency

The net costs of resource management are almost entirely paid by local authorities, despite the fact that they have little control over factors like waste prevention, product recyclability or the stability of the secondary materials market. For instance, packaging comprises 20 per cent of the household waste stream by weight, and ten per cent of commercial and industrial wastes. Dealing with packaging when it is thrown away costs English local authorities around a third of a billion pounds every year.[4] But because they are not able to lower the total cost of managing packaging wastes, they are effectively being forced to subsidise an inefficient system.

High quality secondary materials should be available to UK industry

Globally, Accenture estimates that the market for technologies like recycling that reduce primary resource consumption will be worth $4.5 trillion over the next 15 years.[5] In the UK, opportunities are already at hand: amidst all the steel industry closures, the company Liberty House has been reopening steel facilities in towns where jobs have been lost. Its business model is based on converting recycled steel into high value products for infrastructure projects, and it claims to be turning a profit from the previously loss making assets it has bought over the past three years. But their success will depend on securing a supply of high quality, source separated steel and the UK currently exports low value mixed steel scrap while importing almost the same weight of steel products.

All interested parties should have rights and responsibilities

Policy should ensure a fair distribution of rights and responsibilities across all the groups who participate in the materials recovery system. Achieving effective, least cost outcomes will depend on the combined efforts of producers, local authorities and householders. Policy should ensure that all their contributions are mutually reinforcing and that no one group shoulders an unfair share of the burden.

2
Household waste collection systems need to change

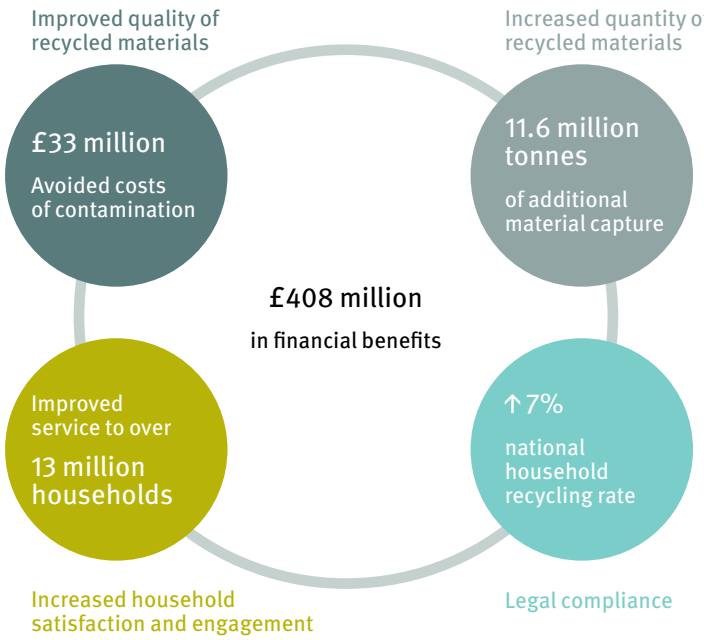
England's current policy framework for household waste reflects none of the three principles outlined in the previous chapter. As a result, recycling rates have started to decline, manufacturers are frustrated by the quality of recycled materials available and reprocessing companies are going bust. To address this, a new system is needed to maximise the quality and quantity of recovered materials. It should provide a consistent service that people are motivated to engage with. And it should encourage product design that minimises life cycle impacts, especially through the increased use of recycled content.

The benefits of a consistent approach

The current patchwork approach to local authority recycling has long been recognised as a source of complication and inefficiency. Since we published our 2014 analysis showing the cost of inconsistent recycling in England, the issue has been taken up by the Department for Communities and Local Government, (DCLG) which estimates that increased partnership working and joint procurement alone could save £70 million per year.[6,7] The Environmental Services Association's more holistic analysis of the savings from more consolidated resource management systems estimates the opportunity at between £200 million and £450 million.[8]

But the most comprehensive analysis has been done by WRAP. The following graphic shows its calculation of the net costs and the financial benefits to all local authorities in England if they were to collect the same set of materials, using streamlined methods.[9]

WRAP's high ambition scenario: cumulative benefits for England, 2016-25



Significantly, these estimates are based on current performance levels so are likely to be conservative, given the added benefits of simpler communication in a more consistent system. With the same set of materials collected everywhere, manufacturers and retailers could put clear messages on their products and make better use of national marketing to explain what could or could not be recycled. This would further increase the quality and quantity of material collected through improved householder understanding. At present only a quarter of households succeed in recycling everything they can with no contamination from unrecyclable materials. Moving towards a consistent system would raise recycling rates and reduce reprocessors' costs in dealing with contamination, both of which would make the UK reprocessing industry more viable.

"Local authorities are frustrated that the costs and responsibilities of achieving national recycling ambitions are left squarely with them."

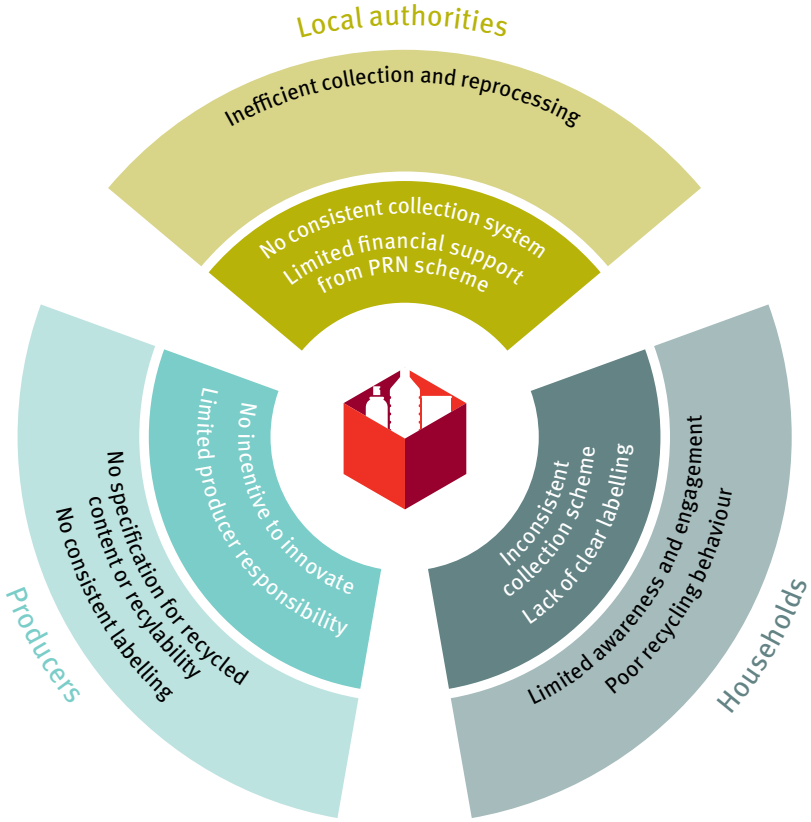
Barriers to harmonisation

But moving from the current approach to an optimised system will not be simple. WRAP's detailed modelling reveals a trade-off between the perceived acceptability of changes to the household recycling system and the savings available. Under its least ambitious scenario in which material quality is not a priority, costs would increase for the majority of local authorities due to the higher costs of collecting food waste and the reduced revenues from the materials sold for recycling. This is an even harder sell at a time when local authority budgets are facing further reductions.

The costs analysis also excludes non-financial barriers to changing the service. For the 201 English district councils, waste and recycling collections are the most visible public service they provide which makes councillors nervous about a backlash. Across all local authorities, years of budget cuts have reduced in-house expertise on resource management. This makes it harder to negotiate new contracts, and more likely that existing contractual arrangements will be extended as the lowest upfront cost option, even if it proves more expensive in the end.

Finally, local authorities are frustrated that the costs and responsibilities of achieving national recycling ambitions are left squarely with them, even though companies and householders also influence what becomes waste and what can be recycled.

Barriers to greater consistency and their consequences



Recycling consistency in Scotland and Wales

Scotland and Wales have introduced policy programmes and financial support to drive greater consistency.

Wales was the first UK nation to address the challenge of recycling consistency as part of its constitutional commitment to sustainability and one planet living. After an extensive review of the costs and benefits of different systems, the Welsh Assembly published its Collections Blueprint in 2011.[10] This is a set of guidelines for Welsh local authorities on how to organise waste management systems to maximise the quality and quantity of recyclables. It includes a list of materials every authority should collect. To help local authorities adopt the blueprint, there is a Collaborative Change Programme providing advice and financial support for the capital costs incurred.

The success of this approach means that Wales is the only part of the UK to meet the EU's 50 per cent recycling target, four years ahead of the 2020 deadline.

Scotland's approach is also based around guidelines for an ideal system design, as described in its Household Recycling Charter. This was developed in collaboration with local authorities and is intended to support *Making things last*, Scotland's circular economy strategy.[11] It is supported by a package of measures, such as funding for councils that adopt the charter, national communications campaigns, mandatory food waste collections in many areas and bans on landfilling recyclable materials.

England could adopt a similar approach to Wales and Scotland, but in the current political context of austerity, devolution and deregulation, the likelihood is low. The only apparent response to WRAP's proposals from the government departments with the greatest oversight of England's recycling systems, has been the reallocation of £1 million of the Department for Environment and Rural Affairs' (Defra's) funding to WRAP to engage local authorities on consistency. By contrast, the Welsh government has committed £2.5 million every year from 2016-19 for WRAP to provide the same service to its 22 local councils. The provision of £1 million spread across all of England's 353 local authorities will do little to dispel the impression that they are being asked to improve consistency without being supported to do it.

However, this challenge is also an opportunity. Rather than increasing the amount of public money spent on fixing an incoherent system, interventions that align producer, local authority and householder interests would reduce the costs of dealing with waste and increase the rewards of recovering resources. Around the world countries have experimented with market measures that reward recycling and reuse. We have studied systems that have been tried to see whether they could work in the English context.

3
Policy lessons from abroad

Design for recyclability

Although packaging will always be designed primarily to keep a product in good condition, there is scope to recover more value from it when it is thrown away. Design decisions about which materials are used, in what combinations and even the colours used affect whether packaging can be recycled and what value it has at the end of its life. This is widely recognised, and pioneering businesses like Marks and Spencer are already exploring whether they can use a single polymer for all their packaging.[12]

Recyclability and the market for end of life materials is also determined by the available reprocessing infrastructure, so recyclability changes over time as new materials are used and new recycling technologies are developed. Policy can accelerate the adoption of these by increasing the cost of using unrecyclable applications or lowering the costs of using more recyclable alternatives.

Various initiatives and policy mechanisms have been proposed to increase the proportion of packaging designed for recovery. A more comprehensive analysis of these and their potential relevance to the UK is included in annex one (page 30). Of these, we favour variable producer responsibility charges that incentivise good packaging design and penalise the use of unrecyclable packaging formats. These charges have been used in France.

France: the Eco-Emballages system

The system

France has developed an innovative policy framework, involving bonuses for producers that reduce packaging waste and engage customers in recycling. It also has penalties for formats that are hard to recycle or are unrecyclable. In practice this means bonuses for the following:

Householder engagement Offering up to eight per cent reduction in producer responsibility payments for including recycling information on packaging and up to a further four per cent for wider media campaigns, such as radio, TV or newspaper adverts.

Reducing packaging or increasing recyclability Offering up to eight per cent reduction in producer responsibility payments for changes that reduce the amount of packaging used or increase its recyclability; for example, switching from multi-material to single material packaging, or stopping the use of unrecyclable pigments.

Recycled content In the case of paper and card products, there is a ten per cent reduction in producer responsibility payments for packaging that has more than 50 per cent recycled content.

There are also penalties, such as a 50 per cent surcharge on hard to recycle packaging; for example, on a PET bottle with a PVC label, as PVC confounds some of the processes used for separating PET from other plastics.[13]

A 100 per cent surcharge is put on packaging made from materials that cannot be recycled; for example, plastic bottles not made of PET, PP or HDPE , or packaging made from materials not collected for recycling, such as ceramic yoghurt pots.[14]

"An approach has been developed that can accommodate changing materials and technologies, whilst also informing packaging design."

Every year Eco-Emballages publishes a set of tariffs based on material types and applications for producers to work out their costs.[15] Producers then register their actions on customer engagement, waste prevention or increased recyclability to receive their discount. Where they have used unrecyclable applications, the surcharges are applied after material and application costs have been worked out.

Producers can learn what is and is not considered recyclable via a flow chart or interactive website.[16] These tools are developed by TREE (Test de Recyclabilite des Emballages) and are based on continuous feedback from recyclers. If a recycler reports a disruption, the packaging is investigated by an expert committee of supply chain representatives. Packaging producers can also consult these expert committees at the design stage to explore whether a packaging format is likely to be disruptive.

The impact

These changes have successfully driven some unrecyclable packaging formats off the market, eg glass bottles with ceramic closures, and have coincided with an increase in packaging recycling rates from 61 to 65 per cent between 2011 and 2014.[17] The overall effect on the design of packaging in France has not been assessed. However, the capacity of any single country to drive changes can be undermined by multinational companies using single product designs for multiple markets. But the scheme has certainly increased the proportion of local authority costs covered by producer responsibility payments, rising from 71 per cent in 2011 to 79 per cent in 2013.[18]

The effect of the recycled content incentive is hard to assess due to limited data available on paper and cardboard recycling levels since the introduction of the bonus in 2011. However, between 2011 and 2013, recycled materials' share of the paper and cardboard market rose from 60 to 66 per cent, and mothballed reprocessing facilities have been reopened. This is at least anecdotal evidence of success.

Lessons for England

France's scheme demonstrates a practical answer to a fundamental challenge: how to determine recyclability. By combining supply chain expertise with feedback from recyclers, an approach has been developed that can accommodate changing materials and technologies, whilst also informing packaging design.

One challenge to copying the French approach in England is our current market-based approach to producer responsibility. The French system of incentives is based on reductions on a standard tariff framework, whereas there is no such standard tariff in England.

Increasing recycled content

Demand for most recycled materials is driven by market forces. But for some recycled materials, there can be non-financial barriers to their use in particular sectors. This is especially true for food and drink applications where there are strict rules on the additives used in packaging. Demand can also be undermined by concerns over cosmetic or physical characteristics.

Many of these barriers will have technical solutions, but realising them requires concerted supply chain collaboration. In a market where the environmental advantages of using recycled materials go largely unpriced, it can be hard for recycled materials to break into established supply chains without incentives. This means the only markets for some recycled materials in the UK are for low value applications or export, both of which reduce the economic viability of the collection system.

"Between 2007 and 2014, the programme was credited with a 3,000 per cent increase in plastic bottles reprocessed within the state."

To address these barriers and stimulate the development of new UK supply chains and infrastructure, the government should match its efforts in ensuring materials are collected for recycling with policy that increases demand for those materials once processed. Annex two on page 31 includes an analysis of the range of potential policies.

Our preferred intervention is a discount on producer responsibility payments for using particular types of recycled materials. We also support mandatory labelling of recycled content, even if the content is zero, to inform buyers. This combination of incentives, information and procurement is found in California's very effective strategy for increasing the amount of plastic recycled in the state and the use of recycled plastic in new products.

California: a successful policy framework

The framework

California has one of the most proactive approaches to encouraging the use of recycled materials and supporting reprocessing. It includes recycled content requirements and declarations, as well as payments to plastic reprocessors and manufacturers that use recycled plastic.

Its efforts to address plastic waste are of particular interest. The state has introduced a suite of measures to reduce the amount of plastic used in packaging and increase the proportion reused or recycled.

Under the Rigid Plastic Packaging Container programme, for all sectors except food, pharmaceuticals and cosmetics, manufacturers have to choose one of the following routes to compliance:

Postconsumer material content: minimum recycled content of 25 per cent.

Source reduction: either reducing the container weight by ten per cent or increasing the concentration of the product by ten per cent.

Reuse: reuse of a container at least five times to hold a replacement product.

Refillable: refilling a container at least five times with the same product.

Recycling rate compliance: at least 45 per cent of the container type is recycled.

As these measures do not apply to food and drink packaging, there is separate legislation to increase demand for recycled material from beverage containers.

California's Plastic Market Development Payment Program has an annual budget of $10 million, paid for out of the unclaimed deposits of California's bottle deposit programme. This provides payments of up to $150 per US tonne (equivalent to £126 per metric tonne) to companies which recycle plastic beverage containers and the same amount to manufacturers which use recycled plastic produced by one of the reprocessing companies.[19] Payments are based on companies self reporting their production or use of recycled plastic, backed up audits of supply chain invoices.

The impact

The market development programme has been very effective at ensuring plastic bottle waste generated in California is recycled there. Between 2007 and 2014, the programme was credited with a 3,000 per cent increase in plastic bottles reprocessed within the state, whilst the proportion of waste plastic exported overseas fell from 90 to 50 per cent.[20,21]

Lessons for England

California's programme demonstrates how a supply chain monitoring approach can be employed to audit the use of recycled material. The measurements can form the basis for interventions to support recycled material use. But, rather than the cash payments used in California, English producers should be encouraged to use recycled materials through offsets against their producer responsibility payments, as happens in France for recycled paper and cardboard.

One further point of interest is the use of the money from unclaimed bottle return deposits as a subsidy. Whilst England has no deposit return scheme, they are under consideration in Wales and Scotland. In California, deposits help to encourage recycling where there are patchy household recycling collections. In England, where there is universal collection of all beverage containers, except cartons, the primary purpose would be to reduce litter and limit a major source of marine plastic waste. It is worth noting that the recycling rates of packaging with deposits in countries that use them are significantly higher than in England.

Better communication to improve household engagement

Having put the conditions in place to encourage packaging designed for recyclability and a greater demand for recycled materials, the final component is to ensure that people use all the services available to them. To achieve this, the transition to a consistent system should be accompanied by communications that make it clear what householders can recycle.

"The transition to a consistent system should be accompanied by communications that make it clear what householders can recycle."

There are already private initiatives, such as the On Pack Recycling Label (OPRL) but corporate participation in this scheme is voluntary. Local authorities are also proactive in informing their residents about local recycling systems, but financial constraints mean the number of people reporting that they had received this kind of information fell by a quarter between 2014 and 2015.[22]

England's producer responsibility framework should copy the French approach, by actively encouraging customer engagement on waste prevention and recycling.

Depending on the level of voluntary business engagement and the impact of these campaigns, it might be necessary to move to a system where communications are carried out by the producer responsibility schemes, with costs covered by producer payments, to ensure the necessary information is available to consumers. This is the model in Belgium where the producer responsibility scheme delivers national communications and works with local authorities on campaigns.

4
How to pay for a better system

The guiding principles we have discussed would lower the cost of managing household waste and boost the UK's share of the packaging value chain. These advantages are additional to those identified in WRAP's analysis of the net savings from consistent recycling.

But under a new system, responsibility for commissioning and paying for collections would still put pressure on overstretched local authority budgets. As discussed, the combination of reduced expertise, emphasis on short term cost reductions and concerns over local political impacts are all barriers to a better system.

European countries with the highest packaging recycling rates all have producer responsibility schemes that cover all the net costs of collecting and processing waste packaging, an approach referred to as full cost recovery. This transfers financial responsibility for managing waste packaging from local authorities to packaging producers and users. It is in line with the polluter pays principle and sharpens the financial incentive for producers to reduce costs.

We estimate the current net costs of dealing with waste packaging from English households are in the region of £300 million.[23] If England was to move to a full cost recovery model, there is likely to be a four to six fold increase on current producer responsibility costs, though this would depend on assumptions made about the future level of Packaging Recovery Note (PRN) payments and the proportion of the PRN market driven by household packaging. These estimates are likely to be on the high side given analysis by Perchards on behalf of the Environmental Services Association that suggests producer responsibility costs would increase three fold for household packaging.[24]

Full cost recovery has a better alignment of incentives to encourage producers to design for recyclability and use recycled content, but it removes the pressure on local authorities to increase their collection efficiency and the quality of materials recovered. A central challenge is how local authority collections are organised.

A comprehensive analysis, commissioned by the Environmental Services Association, of how producer responsibility has been implemented across Europe demonstrates two ways of solving this problem.[25]

1/
Make producers responsible for collections

Under this approach, producers would be responsible for collecting and recycling packaging waste, meaning they would be in charge of contracting for collection. This has been most effectively delivered in Belgium, which has impressively low costs per capita for producer responsibility schemes, given it achieves the second highest recycling and reuse rate for packaging.[26]

"We estimate the current net costs of dealing with waste packaging from English households are in the region of £300 million."

2/
Set standards for collection systems

Alternatively, local authorities could still be responsible for organising collections, but they would be reimbursed on the basis of the materials collected and subject to minimum requirements, for instance on quality. Producers could be involved in agreeing collection scheme designs and payments made on the basis of optimised scheme costs, so local authorities that choose particularly inefficient schemes would have a smaller share of their costs covered. In some countries, bonuses are paid for exceeding cost efficiency or material quality targets.

Belgium and France: lessons in managing costs

According to a pan-European study, published by the European Commission, Belgium has the most effective producer responsibility framework for packaging, maximising recycling rates at lowest cost to producers.[27] It has two schemes: Fost Plus for household packaging and Val-I-Pac for commercial and industrial packaging.

Fost Plus has full financial responsibility for dealing with waste packaging. It contracts directly with municipalities for collection and then sells materials to reprocessors. A representative of the producer responsibility scheme sits on the board that considers tenders for local authority collection contracts to ensure oversight of the efficiency of proposed collection systems.

Reimbursement to local authorities for the costs of collection is based on a standard contract which requires separate collection of paper and glass and then all other recyclables (plastic bottles, drink cans etc) mixed together. This helps to ensure a minimum quality standard of collected materials, but there is also a bonus given for higher quality.

Where local authorities tender out the collection and sorting of recyclables to private companies, this too is done in accordance with Fost Plus standards. To engage householders, local authorities run local programmes, whilst Fost Plus delivers national campaigns on both recycling and littering.

Each year, the net costs of these activities are worked out and obligated companies are charged accordingly. In 2014, these costs totalled €61.5 million, equivalent to €5.3-6.2 per capita.[28] By comparison, a similar calculation for England works out at €7-8 per capita, ie 25 per cent more expensive than Belgium.[29]

In France, collection is still the responsibility of local authorities. A proportion of the cost is reimbursed, based on the amount of material delivered to recycling facilities that exceeds a specified quality threshold. Payments are based on optimised system costs rather than actual costs incurred to encourage more efficient scheme designs. But, as local authorities are free to set their own scheme designs, a wide variety of approaches are adopted.

Pay as you throw

Whether better recycling services and improved communications are sufficient to improve householder engagement in recycling remains to be seen. Evidence from Wales suggests it is unlikely. Research there has shown that food waste is still the single largest fraction of the residual waste stream, even though 99 per cent of Welsh households have a free food waste collection. [30] This has a double negative cost impact on local authorities as it increases the weight of material sent to expensive disposal facilities, and it increases the costs of operating a separate food waste collection as more time and fuel is required to fill the collection vehicle. It also has an economic impact in that it is holding back the anaerobic digestion market which is currently limited by the availability of food waste feedstock. Because AD produces gas that is burnt as a source of renewable energy and a compost-like output that can be used in place of fertiliser, this has consequences for meeting our renewable energy targets and increases the UK's dependence on imported mineral fertilisers.

"Where people can see the point of action to reduce resource consumption and think it has been implemented fairly, they support it."

The evidence from Wales suggests that, to get the best out of using a consistent recycling system in England, variable charging for household waste collections, based on the amount of residual waste produced, should be revisited. The 'Pay as you throw' approach is a consistent feature of the highest performing systems in Europe. Research into these schemes has shown that it cuts residual waste and increases recycling without negative consequences like reduced recycling quality or increased flytipping.[31]

This approach has a controversial history in the UK. Labelled a 'bin tax' in the media, powers for local authorities to implement it were removed from the statute books in 2012.[32] But in a new system where businesses redesign their packaging and local authorities collect all the recyclable materials possible, there would be a renewed rationale for charging people who recycle less than they could. As more households receive consistent services, and they are better communicated, it will be increasingly unfair on those businesses, local authorities and householders that play their part if there are people who still choose not to recycle.

Charging based on the amount of waste produced should only be an option where the consistent approach is adopted. Even then, it should only be applied after several years of delivery and evidence that a significant proportion of recyclable materials is still ending up in the residual waste stream. Such a phased introduction would follow the experience of some of Europe's best recyclers, such as Contarina in northern Italy, where the introduction of pay as you throw significantly increased recycling rates, but only after people had become used to the new collection system.[33]

Politicians might be nervous of a bin tax backlash, but they should draw reassurance from other countries. An international study of pay as you throw schemes in Canada, the Netherlands, Sweden and Switzerland found that support is higher amongst people that receive them than people that do not.[34] This counterintuitive finding chimes with the experience of implementing the charge for plastic carrier bags in England, where support for the policy increased after it had been introduced.[35] Evidence shows that, where people can see the point of action to reduce resource consumption and think it has been implemented fairly, they support it.

5
Recommendations

Image courtesy of Wrap

Combined evidence from international examples shows that a more collaborative approach to managing resources is possible. To make it work in England, rules that shape producers' decisions around product design, their use of recycled materials, and how they engage with customers on recycling need to change. The current system, the Packaging Recovery Note (PRN), does not reward producers that try to improve outcomes for everyone.

Moving from the present disjointed and inefficient household recycling system in England to a better, fairer one will require simultaneous efforts from businesses, local authorities and householders. WRAP's research provides a vision of what is needed.[36] But beleaguered local authorities need reassurance that implementing change will be economically and socially viable.

To change the system, businesses and householders must have a greater financial stake in its success. For businesses this means profiting when their actions reduce the cost or increase the resilience of the UK's resource management supply chain, and paying when they undermine it.

And this same principle should apply to households, once businesses and local authorities have fixed the structural problems that prevent their effective participation.

We propose three reforms which should accompany the move to more consistent collections:

1/
Reward responsible companies

The framework for producer responsibility should reward design which helps waste prevention, reuse, recyclability, greater use of recycled content and public recycling campaigns. France's experience of varying producer responsibility payments, depending on the recyclability and recycled content of their packaging, demonstrates the feasibility of this approach.

2/
Producers should help to pay for recycling

The framework should also give producers greater influence over the system's design to ensure cost effective collections in return for paying a greater share of the costs. Belgium's experience shows that making the private sector fully responsible for designing collection systems has led to higher recycling rates than in England at lower cost.

It is doubtful that these principles can be retrofitted onto the UK's current market based approach to producer responsibility. The PRN system was never intended to internalise all the costs of packaging wastes, and incentives to design for waste prevention have only been introduced in countries where there is a uniform set of tariffs.

3/
Make the system fairer for local authorities

Local authorities that adopt the consistent approach should receive help with the costs involved. In Wales and Scotland, there is public funding to help with the transition. But, given the low likelihood of public money being available for this in England, the support would have to come from producers or householders. But such payments should be contingent upon operating a system that fits within a consistent national framework.

To help develop the economies of scale that make the Belgian system so cost effective, contracts with local authorities should include bonuses for collections that exceed minimum cost efficiency standards and for delivering materials that exceed minimum quality thresholds. Research by Eunomia in Wales, and by WRAP in England, has shown that the most cost effective schemes also yield the highest quality materials.[37,38] These bonuses would help to support consistent services, not only in what materials are collected, but how they are collected.

Because householder participation is central to realising the economic benefits of a nationally consistent system, local authorities delivering a consistent service should be allowed to charge more to those who waste more. This will be especially important to increase the collection of food waste, which remains the single largest part of unrecycled waste in Wales, despite universal food waste collection, and because the costs are borne entirely by local authorities.

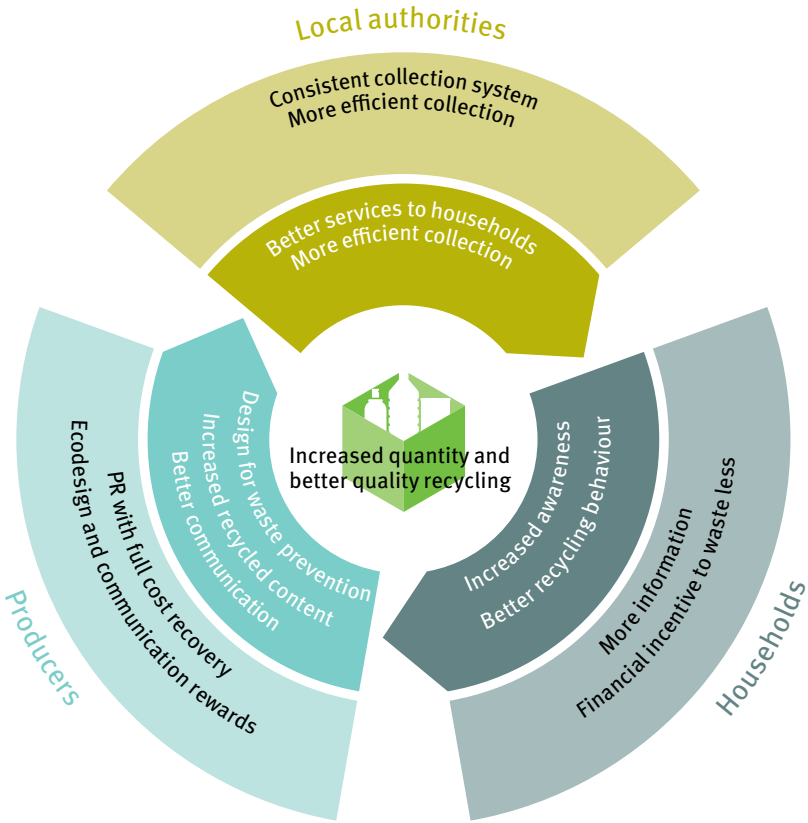
Make the most of WRAP

A more comprehensive approach to producer responsibility in England would need to build on the lessons of schemes in Belgium and France, amongst others. One advantage England has in adapting models developed elsewhere is WRAP's expertise. Its knowledge of collection system costs, ecodesign and secondary materials markets means it is well placed to provide the same advising and convening role that monopolistic producer responsibility schemes play in other countries. How WRAP could interact with a producer responsibility scheme or schemes, or how it would be paid for, would have to be determined, but using its established expertise would save the time and expense of trying to recreate this capacity in a new body.

One area for WRAP to advise upon would be which materials and packaging formats should be eligible for recycled content bonuses. Using recycled materials is harder for some applications, such as food contact plastics, than others. There are also global market dynamics, such as declining paper demand or low oil prices, which affect the competitiveness of recycled materials, especially where their environmental advantages are largely uncosted. Incentives should be restricted to those applications and materials which are hardest to recycle back into their original use.

Implementing increased consistency alongside greater producer or householder responsibility ensures everyone's good actions are mutually reinforced. It supports an 'I will if you will' approach that can lead to a lower cost system, and a more transparent and resilient secondary materials market.

Aligned incentives in a better system



6
Conclusions

Since becoming prime minister, Theresa May has emphasised her desire to "restore fairness" in Britain and "repair" free markets where they do not work.[39] Given the amount of public money spent on it, fixing household recycling should be a prime target for this approach.

By ensuring that positive steps taken by businesses, local authorities and householders reinforce each other, policy can encourage a fairer distribution of rewards and responsibilities. Policy can help to repair a free market, in which the public sector is disproportionately paying the costs of problems created by the private sector, by making sure that those who are the source of wasted materials pay a greater share of the costs of dealing with them.

"After Brexit, the government will have good reason to be bolder and support a consistent national household recycling system that works for businesses and householders, and is fairer to local authorities."

As well as being fairer, a more consistent approach to household recycling is an economic opportunity. Improving the UK's market for secondary materials will keep more of the supply chain in this country. Promoting design that prevents waste will stimulate innovations that will have a global market, as the world struggles to deal with resource constraints.

The Westminster government has been behind the curve on acting to deliver better resource management. The uncontroversial success of the five pence plastic bag charge shows that the public will accept changes and charges where they can see a reason for them.

Although there is a vocal minority that grumbles about recycling, surveys consistently show overwhelming public support for recycling and frustration over not being able to recycle better and more. Half-heartedly following the EU's lead, England's policy approach to date has been a balancing act between fear of missing targets and annoying the public.

As we have shown, after Brexit, the government will have good reason to be bolder and support a consistent national household recycling system that works for businesses and householders, and is fairer to local authorities.

Annex one
Policies to promote recyclability

Scheme	How implemented	Comments
France: Bonus/Malus This system modulates the fees payable by a producer based on the recyclability of their packaging (see page 14 for further details)	Discounts of up to eight per cent for improved packaging designs and surcharges of 50 per cent of baseline costs for 'disruptive' and 100 per cent for 'non-recyclable' packaging.	This has succeeded in driving some hard to recycle material combinations off the market, eg glass bottles with ceramic closures or PVC labels on PET bottles. The policy has coincided with an increase in packaging recycling but no data is available on the recyclability of packaging in France.
Public procurement Using public sector demand to expand the market for more recyclable alternatives	Proposed for packaging, has been used successfully in other applications, eg prison mattresses.	Successful examples of this are restricted to products where public sector demand is in the form of a tender, ie a confirmed procurement commitment. Guidelines that recommend procuring more recyclable packaging are unlikely to provide a clear market signal.
EU recycling targets In theory packaging recycling targets should stimulate design for recyclability	Implemented across EU for packaging materials	The national level of these targets mean they are too remote from businesses to change design decisions without implementing policies.
Eco-label and other information based measures	Recyclability criteria are included in eco-labels and other certification schemes for certain applications,eg EU eco-label for printed products.	This is only useful if linked to procurement and there is little evidence on the effect of green procurement on the demand for more recyclable versions of products.
Voluntary agreement Some industry initiatives to increase recycling have included increased recyclability in their criteria	Several examples in the UK, eg the Dairy Road Map. WRAP is also convening an industry-led group to look at increasing the recyclability of packaging, especially plastics, as part of the follow up to its consistency work	The Dairy Road Map was successful in securing small changes to the design of milk bottles but this was facilitated by a highly consolidated supply chain and an already largely standardised product, eg all milk bottles are made from the same material.

Annex two
Policies to increase recycled content

Scheme	How implemented	Comments
Targets/requirement Recycled content targets mandate minimum proportions of post-consumer recycled material to be used in a finished product	California has a minimum 35 per cent recycled content requirement for glass; 40 per cent for newsprint and packaging paper.	Recycled content targets are the most interventionist way of supporting the use of secondary materials and require supply chain auditing to monitor and enforce.
Reporting and public procurement Producers have to declare the recycled content of their product to facilitate public procurement of recycled products	In California, state agencies require all suppliers to certify the post-consumer recycled content of all products offered or sold to the state. There is then a further requirement on 11 product categories for which state agencies have to purchase at least 50 per cent recycled products	Whilst informed consumption has not been especially effective for consumers, a link to public procurement should help increase its effectiveness. However, there is no analysis on the impact Californian public procurement has on demand for recycled materials.
France: bonus for recycled content	Only for paper and cardboard: if there is 50 per cent recycled content then there is a ten per cent reduction in charges	See annex 1, this measure has coincided with an increase in the proportion of recycled material in the French cardboard market.
Subsidy Payment to producers of recycled materials (reprocessors) or manufacturers that use recycled materials.	California's Plastic Market Development programme has a $10 million budget to pay subsidies of up to $150 per tonne to plastics reprocessors and manufacturers using recycled plastics from beverage containers.	California's subsidy regime is one of several measures that has coincided with a significant increase in plastic reprocessing in the state.
Reduced VAT Products that incorporate a minimum proportion of recycled material could be eligible for a reduced rate of VAT.	Proposed for recycled materials by the Environmental Audit Committee in its 2014 Throwaway society report. This already applies to certain product types,eg energy saving materials for buildings are charged at five per cent.	The Treasury has always resisted this idea on the basis that it does not want to do anything that further complicates VAT law, proving recycled content would be challenging and EU laws restrict the ability to vary VAT. Whilst the UK's vote to leave the EU should remove the last of these barriers, the Treasury's view on the other two is unlikely to have changed, although California's incentive scheme demonstrates that assessing recycled content through supply chain auditing is feasible.
Eco-label and other information based measures See also annex 1, these are intended to enable targeted procurement	Various schemes exist that certify recycled content such as the recycled content label from global certification company SCS, which has been applied to Novelis' 100 per cent recycled content aluminium can in the US. The Forestry Stewardship Council also have a recycled content label for paper products.	As with design for recyclability, the use of labels and other information based measures is only effective if linked to procurement. There is evidence that green procurement has increased demand for particular product types, such as office paper, but there is no evidence on packaging.
Voluntary agreement See also annex 1, this would be an industry led initiative to agree a target for recycled content in specific applications	The Dairy Road Map included targets for increasing the recycled content of milk bottles.	The Dairy Road Map proved to be a high profile failure when a fall in the price of virgin plastics led to manufacturers cancelling supply agreements for recycled plastics and the eventual bankruptcy of those suppliers.

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