

PACKFLOW HYBRID MODEL

AN ENHANCED APPROACH TO EPR REFORM



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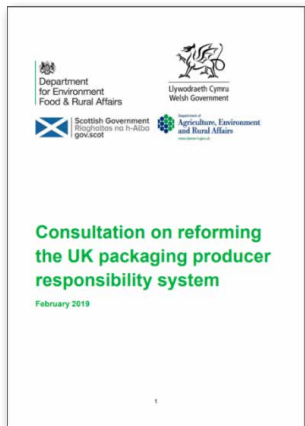
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INTRODUCTION

The UK Government is currently consulting on the future of our packaging producer responsibility (PR) system. This is a major commitment in the recently published Resources and Waste Strategy for England along with similar plans published by the Devolved Administrations. The intention is to implement the EU Circular Economy Package (CEP) which requires producers to pay at least 80% of the costs of packaging collections, sortation and recycling, after material revenues are subtracted ('full net costs'). The CEP has also set higher EU recycling targets for 2025 and 2030, which the UK intends to adopt.



This means more recycling, more producer funding and the timely opportunity to shape our system not just to recycle what is required, but to drive positive change and maximise overall environmental benefits.

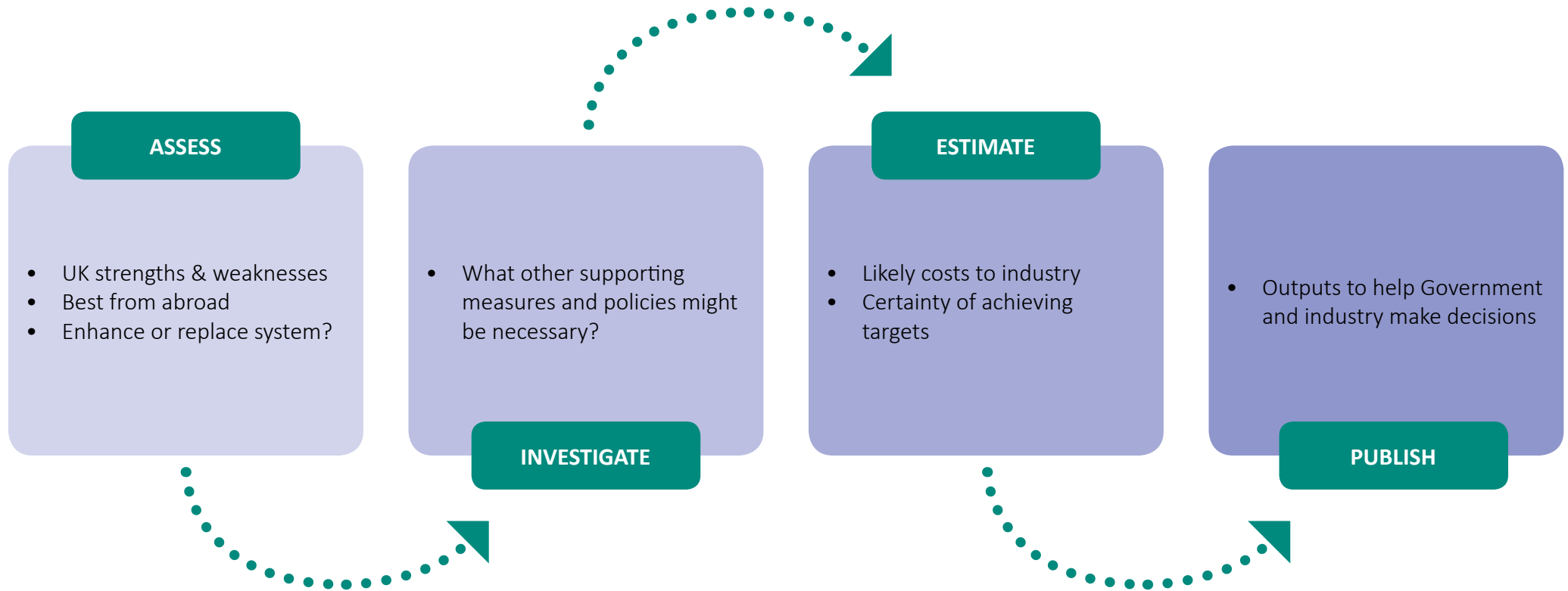
Over the last three years, Valpak has invested time and resource into researching other European compliance systems to understand how we can best achieve the new CEP requirements and enhance the UK system. Identification of successful common factors and lessons learnt led to the publication of PackFlow 2025 in 2017.

PackFlow 2025 highlighted the need for change to drive higher recycling rates, potentially adopt full net costs (FNC) and shape our system to encourage more design for recycling, consumer recycling campaigns and strategic planning and investment.



The basis of this new report is to highlight the key drivers to increasing recycling identified in PackFlow 2025 and to examine which of the options proposed by the Government offers the best opportunity for the UK. A hybrid incorporating elements from a number of models is then proposed to provide a more complete solution, underpinned by evidence and experience.

Both PackFlow 2025 and the PackFlow Hybrid Model have been shaped by feedback from industry and stakeholders.

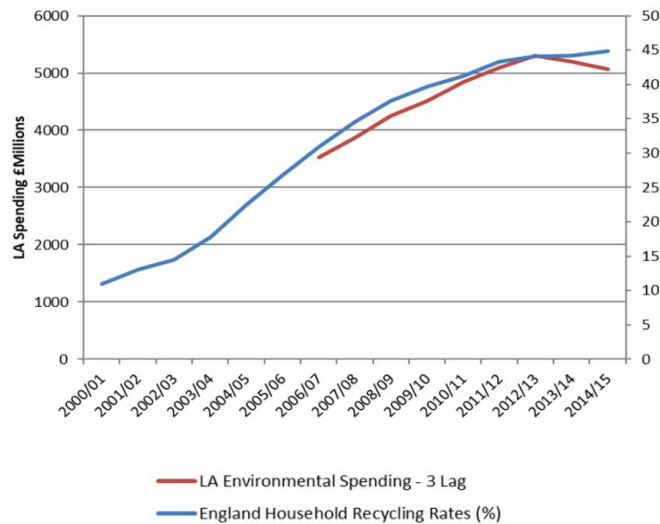


PackFlow 2025 Key Findings

WHAT IS DRIVING GROWTH?

The two main consistent drivers for UK recycling growth historically have been central/local government spending on recycling collection infrastructure and the rising cost of landfill tax.

The metrics associated with these two drivers were tested against recycling rates to ascertain if a correlation exists; there was a very strong correlation in both cases. This is similar in other European countries where landfill taxes act as an incentive to divert material away from landfill and towards recycling and/or incineration.



Although PRNs **do not directly increase** recycling rates, they do **smooth out price drops and peaks** and **can stimulate** the end market.

We examined the relationship between PRN prices and recycling rates for all packaging materials over an eleven-year period. Despite the PRN system supporting UK recycling, there was no correlation between any of the materials' recycling rates and PRN prices.

This was similar to studies conducted in other European countries, where no correlation was established between material levies charged and recycling rates.

We researched compliance regimes in Germany, France, Belgium, Netherlands, Spain and Italy. Due to aspects such as national legislation, waste management structure and culture, it is difficult to compare them directly. However, good practice and lessons learned were identified.

Strategic Development

5-6 year governmental contracts facilitate longer-term strategic planning as does scheme funding of communications, strategic projects and litter campaigns. In France, research and trials into collection, sorting and recycling of non-bottle plastic packaging and eco-design have been funded; Belgium is also trialling non-bottle plastic collections; Italy is trialling additional polymer sortation and recycling and Spain has trialled and introduced sortation of residual waste. Unlike the UK, there is no direct spend on recycling in these countries, but schemes support national recycling through strategic projects and minimising the export of waste packaging.

Scheme & Quality Control

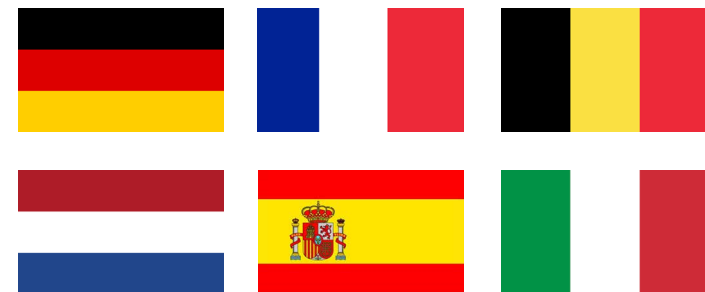
Schemes researched had greater control of collections, sortation and recycling than the UK. The Belgian scheme defines how collections should be managed and only pays FNCs to compliant municipalities based on material quality. Other schemes encourage municipalities to collect packaging waste in a certain way, but have no power to enforce/penalise: they only specify sorted material quality.

Communication Programmes

Significant national communication programmes are commonly funded by all countries without competitive schemes. Some compliance scheme revenues are used to fund recycling communication campaigns on a national and/or local level. Spain credits increased recycling, in part, to consumer awareness and close co-operation with public authorities.

Behaviour Change

There is a drive to increase recycling through positive behaviour of producers, householders, local authorities and waste management companies (WMCs). Householders are encouraged to recycle more and more carefully through communications campaigns, incentives and penalties. Producers are driven by material levy fees and recyclability charges. Local Authorities and WMCs are incentivised through payments or penalties for poor quality and sorting.



Summary of Lessons Learnt

Improve quantity and quality of recyclate	Influence behaviour	Maximise measurement	Increase revenue in the system
<p>Consistent collections light packaging/paper/glass</p> <p>Collection/sort contracts LAs have to deliver quality to receive full payment</p> <p>Influence reprocessing define/develop end markets creating a circular economy</p>	<p>Communications at a local & national level</p> <p>Encourage switching to recyclable formats/ polymers</p> <p>Recyclability indices</p> <p>Fines for contamination of recyclate streams</p> <p>Pay as You Throw (PAYT)</p>	<p>Minimise fraud- accurate auditable POM calculations</p> <p>Align recycling measurement point</p> <p>Review Incinerator Bottom Ash (IBA) protocols for metals to ensure alignment</p>	<p>Reduce de minimis: capture more companies and raise awareness of regulations</p> <p>Longer term strategic planning & investment by compliance schemes</p>

The UK Government is currently consulting on the reform of the UK's packaging system. Four models have been proposed and are described briefly¹ here.

Model 1: Enhanced near-to-business as usual - compliance schemes is based on the current model. All obligated producers are required to join a compliance scheme and schemes need to demonstrate FNC recovery payments for household (HH) and HH-like packaging.

An independent Advisory Board, established by Government, would provide strategic oversight of the system and schemes, and provide guidance on FNCs, the packaging materials/formats deemed recyclable and modulated fee rates for different types of packaging/formats. Schemes would use a proportion of producer fees to support communications and litter campaigns: this funding would be transferred to the Advisory Board to allocate to each nation.

Schemes would compete to access LA packaging waste, entering into contracts with LAs for an agreed period (possibly 3- 5 years). LAs would recover their costs from their contracted scheme. For HH-like packaging not collected by LAs, schemes would contract with sorting facilities/transfer stations that

receive packaging waste from commercial collectors. All payments would be based on meeting acceptability criteria relating to tonnage, quality and supporting evidence that the packaging had been recycled. For commercial and industrial (C&I), packaging waste schemes would continue to purchase evidence of C&I packaging waste recycling.

Model 1 - Pros

- ✓ LAs receive collection costs (some operational flexibility)
- ✓ Agreed national formula considers quality of collected material
- ✓ Funds centrally coordinated- communications and litter campaigns
- ✓ Builds on existing infrastructure and organisations
- ✓ Reprocessors receive funding for evidence of recycling
- ✓ Provides choice of service provider for producers
- ✓ Achieving targets is scheme responsibility
- ✓ Competition drives efficiencies in the market

Model 1 - Cons

- ✗ LAs exposed to market forces
- ✗ Risk that some LAs may not be contracted: "safety net" needed
- ✗ Compliance schemes assume increased, untested strategic role

¹ Text a synthesis of https://consult.defra.gov.uk/environmental-quality/consultation-on-reforming-the-uk-packaging-produce/supporting_documents/packagingprconsultdoc.pdf

Model 2: A Single not-for-profit management organisation (PMO) would deliver on all aspects of the system (including meeting targets). All obligated producers would register with the PMO, who would collect producer fees based on the quantity and type of packaging handled. Modulated fees would be proposed by the PMO (agreed with Government) to achieve FNC recovery.

The PMO would allocate the funds to ensure targets and other outcomes are achieved and would make payments to LAs and WMC/sorters in accordance with priorities and agreed funding formulae. These payments would support the delivery of minimum service standards/collection blueprints/codes of practice in each nation. The PMO would set aside a proportion of producer fee income for communications and litter campaigns in each nation.

There is no statutory role for compliance schemes in Model 2 and as exporters/reprocessors would not need to sell evidence of recycling, there would be no need for them to be accredited. Instead, they would be required to report tonnages of all packaging waste exported or reprocessed to the regulator.

Model 3: Separate scheme for household/household-like packaging and commercial/industrial packaging merges models 1 and 2. Household and household-like packaging waste would be responsibility of the PMO and compliance schemes would take responsibility for C&I packaging waste.

Producers could pay the PMO directly, or via compliance schemes. Funds would be apportioned for local and national communication campaigns.

Model 2 - Pros

- ✓ LAs receive consistent & fair funding (agreed national formula)
- ✓ Agreed national formula considers quality of collected material
- ✓ Funds centrally coordinated- communications and litter campaigns
- ✓ Can appear less complex
- ✓ Increased opportunities for funding transparency

Model 2 - Cons

- ✗ Significant transition issues – large new organisation (200-300 staff), systems and funding streams to be established
- ✗ No role for reprocessors- how will funding flow to recycling?
- ✗ Achieving targets is responsibility of single body- little enforcement option if targets not met
- ✗ Risk as all funds flowing through one organisation
- ✗ No choice of service provider for producers
- ✗ Costs to producers likely to be higher- no competitive cost control mechanism

Model 4: Deposit-based government managed system would most likely be delivered by a government established system administrator. Obligated producers could register directly with the system administrator or a service provider similar to current compliance schemes, although these would not be formally established. Obligated producers would pay a deposit fee (per tonne, per material) for all recyclable packaging they place on the market/handle. For all non-recyclable packaging, they would pay a fee, set high enough to incentivise the use of recyclable packaging. Some of the fee would support communications and litter-related measures. In addition, a further fee would be paid on the tonnage of household packaging to ensure FNC recovery of household packaging waste by LAs.

Producers would reclaim deposits against evidence from reprocessors/exporters based on commercial arrangements agreed between producers (or their service provider) and recyclers/reprocessors. The cost of evidence would be determined by the market, and the income raised from recyclers/reprocessors from the sale of evidence would be expected to pass along the chain to sorters and collectors. This would provide the incentive to separate, collect and recycle more packaging materials including household-like packaging. Evidence could also come from backhauling where feasible (e.g. collection points in store) and where it can be demonstrated the material has been recycled.

Deposits would only be returned in full if the recycling is closed loop and to equivalent use, e.g. clear food grade PET to clear food grade PET. Producers would have to provide evidence that an equivalent amount of the same packaging material had been recycled. The scheme administrator would make payments to LAs in accordance with an agreed funding formulae. These payments should support the delivery of any minimum service standards/collection blueprints/codes of practice in place in each nation.

Model 4 - Pros

- ✓ Producers to offset their obligation using own material (HH)
- ✓ Agreed national formula considers quality of collected material
- ✓ Maximises scope for market forces
- ✓ Clear incentive for producers to maximise recycling/recyclability

Model 4 - Cons

- ✗ LAs have little control over communications (unclear how communications would be funded in this model)
- ✗ No guarantee LAs will receive full costs
- ✗ Likely to involve the most significant transition issues
- ✗ No clear responsibility for achieving targets
- ✗ Complex for producers to engage (particularly small producers)
- ✗ Producers require large amount of interaction with the system
- ✗ Large up-front cost to producers/negative cash flow

Proposed Producer Responsibility – Mind the Gaps

The table below is a reminder of the key learnings from PackFlow 2025, but also illustrates the elements covered in the proposed models and those which remain unaddressed.

The key learnings in the yellow dashed circles are critical to the success of a reformed UK system, but not fully addressed in any of the proposed models.

Valpak has therefore designed a ‘Hybrid Model’ which incorporates these, in addition to those already designed into reform. The Hybrid Model builds on our current system, facilitating the transition to an enhanced FNC system.

The importance of strategic planning and funding of end market development is discussed next, followed by an outline of the Hybrid Model and its pros and cons.

Improve quantity and quality of recyclate	Influence behaviour	Maximise measurement	Increase revenue in the system
Consistent collections light packaging/paper/glass ✓	Communications at a local & national level ✓	Minimise fraud - accurate auditable POM calculations ✓	Reduce de minimis : capture more companies and raise awareness of regulations ✓
Collection/sort contracts LAs have to deliver quality to receive full payment ✓	Encourage switching to recyclable formats/ polymers ✓	Align recycling measurement point ✓	Longer term strategic planning & investment by compliance schemes
Influence reprocessing define/develop end markets creating a circular economy	Recyclability indices ✓	Review Incinerator Bottom Ash (IBA) protocols for metals to ensure alignment ✓	✓ covered in the Consultation or work in progress ✗ government does not intend to progress currently ○ not covered in the Consultation
	Fines for contamination of recyclate streams ✗		
	Pay as You Throw (PAYT) ✗		

A fully enhanced producer responsibility system will facilitate the growth of existing and new end markets to match increases in packaging collections and recycling, and drive adoption of recycled content. To grow end markets, and hence, recycling capability, long-term strategic investment is required.

Disposal taxes and bans

The UK has experienced issues in the past with centralised strategic funding, with models such as the Green Investment Bank proving unsuccessful in providing finance for plastic recycling. Consider, for example:

- How would central body funding work in a commercial environment?
- Who controls the investment and the potential returns?

The Need for Strategic Planning & End Market Development

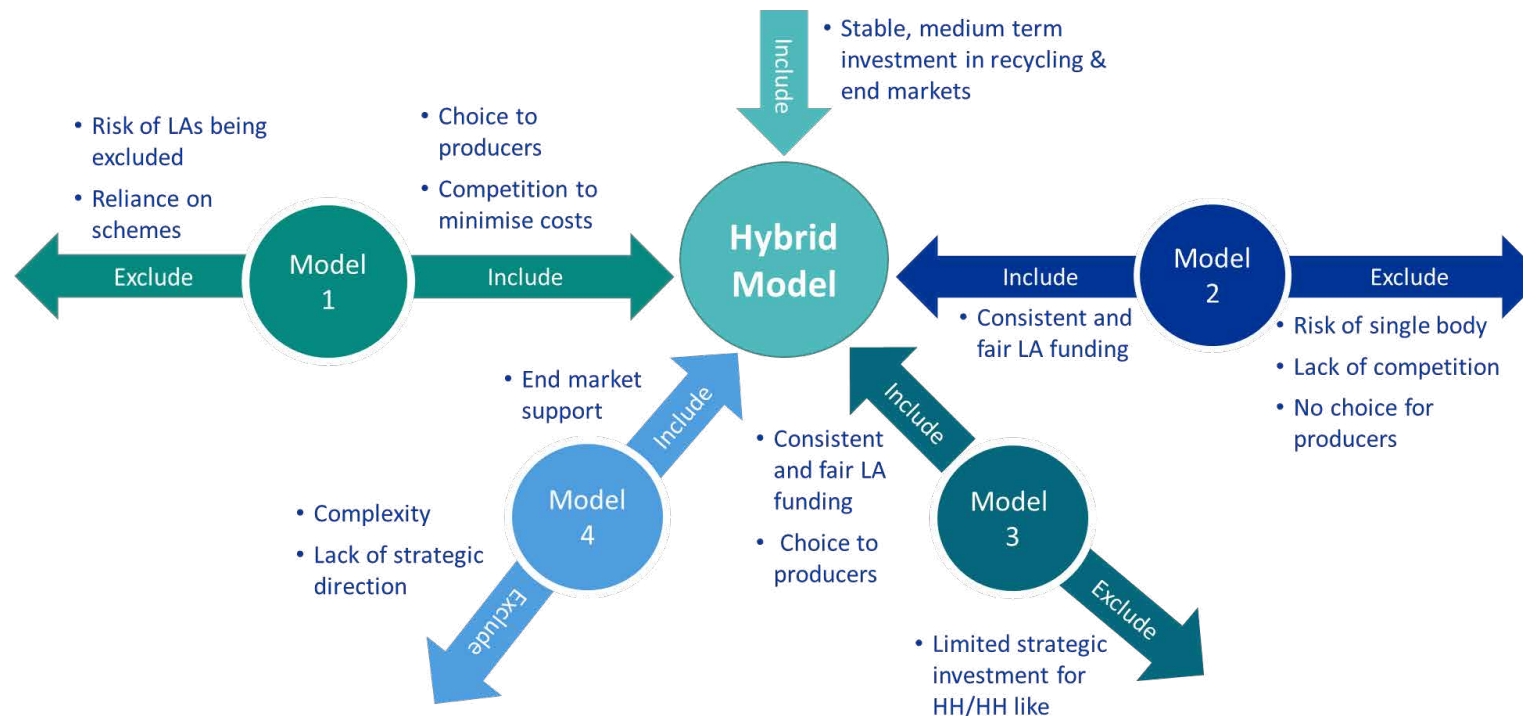
- Increasing volume of material needs capacity growth and end market support
- New technology and end markets needed for pots, tubs and trays (PTTs), consumer film (and other new materials)
- Chemical recycling needs investment to move beyond pilot stage to enable recycled content in more food-contact packaging and to boost recycling rates
- The economics of chemical recycling are not as robust as mechanical recycling- needs support to surpass pilot stage

- If focus on a collection, not recycling target, danger that collected material ends up in energy for waste (EfW)
- Consistent collection targets address supply, plastic tax helps drive demand, but there is no support for the middle (reprocessing)
- UK's dependency on export markets needs addressing
- End markets will demand and drive quality of collections
- No end market support could result in surpluses as global price drops
- UK has achieved current end market capacity through strategic support (WRAP) and PRN supports. Danger of reducing one and losing the other

Filling the Gaps - PackFlow Hybrid Model

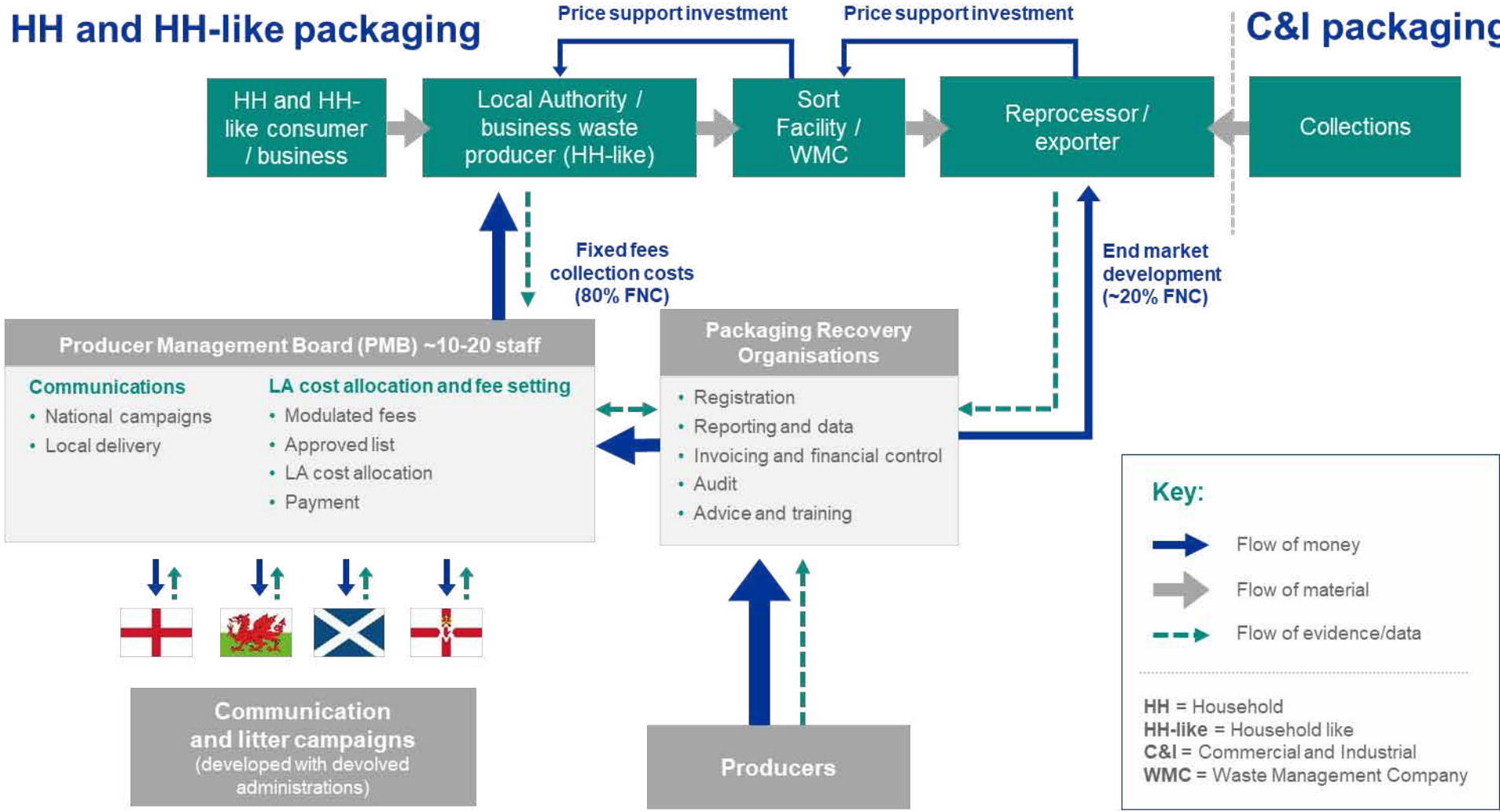
The current UK producer responsibility system doesn't guarantee income for a reasonable investment period and compliance schemes struggle to influence infrastructure and end markets development. This is despite increasing interest from scheme members for their PRNs to fund the development of UK recycling and closed loop recycling.

The PackFlow Hybrid Model incorporates the best elements of Models 1 to 4 and enhances support for UK recycling and end markets. Household and household-like collections are managed and funded as per Model 2, so local authorities will be fairly and consistently reimbursed for their necessary costs, negotiated and managed by a Producer Management Body (PMB).



HH and HH-like packaging

C&I packaging



Reprocessors receive revenue funds from schemes under multi-year strategic arrangements to help them to invest in increased capabilities. This means that recyclers also receive their share of FNCs and have some security in developing their capacity, technology or end markets (varying by material type).

Producers are required to participate via ‘Packaging Recovery Organisations’ (PRO) which operate on behalf of their members, supporting UK recycling and promoting a circular economy in the most economically effective way. There would be significantly increased operational, strategic and reporting requirements placed on PROs and reprocessors, compared to the current system to facilitate much more transparent fund use. This is also likely to require a significantly increased level of monitoring of PROs which could be performed by either the appointed enforcement bodies or incorporated into the PMB. A consequence of this is that the increased annual approval/registration costs and commercial risks are likely to limit the number of PROs in the market. PROs may offer reduced fees to producers for multi-year arrangements.

Maintaining measurement at the point of recycling ensures performance is based on actual recycling and not collections. Targets are set in legislation and are designed to be ‘hard’ every five years; i.e. they must be met in the designated year – 2025 and 2030, for example. The interim years could have ‘soft’ targets, which could be exceeded or missed as long as they are met with

over-carry from the previous or subsequent year. Forward contracting for recycling is allowed, but not beyond hard targets. PROs would be expected to produce and update strategic plans to show how they plan to meet the targets and encourage infrastructure in future years.

In this model, the PMB is still required to manage national communication campaign funding and to set the scale of payments for LAs. However, it will not require a large operational resource and expertise to manage the administration of liaising with thousands of producers, data management and reporting, information and advice, producer financial and invoicing arrangements. PMB resource is likely to be 10 to 20 full time staff rather than 200 to 300 needed in model 2.

In setting the scale of funding to LAs, the PMB would incorporate performance related incentives. For example, payments being increased for higher tonnages of higher quality material, but less for low quality material or lower collection rates. This would encourage further efficiencies in the collection systems.

PackFlow Hybrid Model - Cons

- ✘ Marginal projects may not get investment
- ✘ Reprocessors apply for capital in conventional way (but can incorporate strategic funding from PROs into investment decisions)

PackFlow Hybrid Model - Pros and Benefits

The PackFlow Hybrid Model provides a range of benefits to different stakeholders in the system:

Producers	Local Authorities	Reprocessors	Governments	Transition and Implementation
Lower Costs	Consistent, fair and stable funding	Improved quality of collected material	Retains strategic management role	Significant reduction in size and activities of PMO (~10-20 employees as opposed to ~200-300)
Choice of service provider	All LAs will get funding	Financial support available for strategic investment (~£200 million)	Funds national and local litter campaigns	Retains existing relationships with Packaging Recovery Organisations and reprocessors
System transparency due to producer involvement in end market investments	Guaranteed outlet for materials	Remains market driven Packaging Recovery Organisations forced to engage with End Markets strategically (Plastic Tax)	Retains strategic oversight of funding Spreads risk of targets amongst Packaging Recovery Organisations Target Driven	Builds on existing infrastructure and organisations

There are clearly many detailed points which require further work and investigation for whichever model or models the Government selects, following the consultation process.

The recommendations from this report are:

- 1.** That stakeholders consider incorporating the concept of a hybrid model (which combines a number of benefits from each of the existing models) into their consultation responses
- 2.** Government undertakes further work and analysis on the hybrid concept in parallel with its assessment of the existing 4 models. This could be in association with industry and Local Authority stakeholders as well as its Advisory Committee on Packaging
- 3.** Further economic modelling be conducted to attempt to identify the likely cost differences between alternative models
- 4.** That a shorter and more closely defined set of options be presented for further consultation in a second stage.

C&I	Commercial & Industrial	PAYT	Pay-as-you-Throw
CEP	Circular Economy Package	PMB	Producer Management Body
EfW	Energy from Waste	POM	Placed on the Market
EPR	Extended Producer Responsibility	PR	Producer Responsibility
FNC	Full Net Cost	PRB	Packaging Recovery Body
HH	Household	PRN	Packaging Recovery Note
LA	Local Authority	PTTs	Pots, Tubs & Trays
MRO	Material Recovery Organisation	WMC	Waste Management Company

Annex - Case Study of Competition in Producer Responsibility

In 1990 the German packaging system Duales System Deutschland (DSD) was established as a not-for-profit single monopoly system to ensure packaging producers met their obligation to take back household packaging waste.

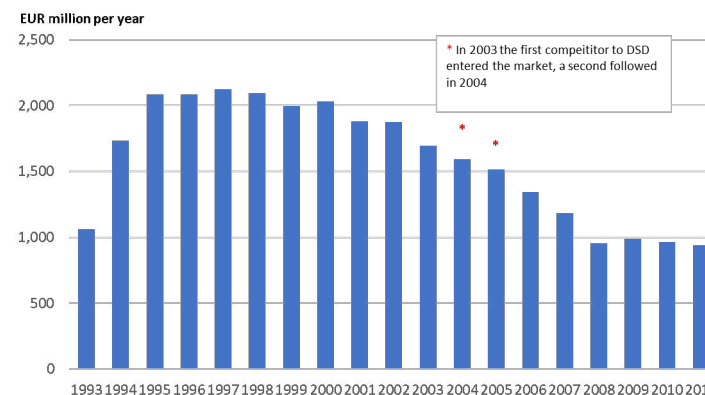
Over time, following concerns over restrictive practices and high costs competition was introduced to the compliance market. In 2003 the first competitor to DSD entered the market followed by a second in 2004. Further new entrants followed and by 2008 there were nine competing compliance schemes in operation. DSD's market share declined to 44% in 2011.

In 2012 the German Competition Authority (Bundeskartellamt) published a detailed sector [inquiry](#) showing how creating a competitive compliance market had affected costs and packaging recycling performance.

The study reported that the cost of compliance schemes fell dramatically, from ~€2billion/year in 1998-2000 to less than ~€1billion/year 2008-2011 (Figure 1)

Prior to competition one of the most common arguments made in favour of monopoly was that competition would impact negatively on recycling rates whereas in fact these were not negatively affected: under competition household light weight packaging recycling increased to 73% in 2011 compared to 62% in 2002.

Figure 1: Costs of packaging compliance system, 1993 to 2011



Opening the compliance market up to competition also led to increased innovation in recycling and sorting technology, driving improved recycling performance and further reductions in the cost of packaging recycling.

In other European countries the trend in producer responsibility systems is to move towards greater market competition, there are no examples of packaging systems moving to monopoly structures from competitive models.

Annex - Case Study of Competition in Producer Responsibility

In 2017, the German Competition Authority published an ex-post evaluation study to further quantify the impacts on recycling performance and compliance costs following the introduction of competition to the compliance market link.

The evaluation is based on the comprehensive database collated during the sector enquiry discussed above. It found that the monopoly compliance system (under DSD) was overcharging by as much as 174% due to inefficiency and excessive operating costs. By comparison, a survey of international evidence on hard-core cartels in other sectors found typical monopoly overcharges of between 10% and 30%, with 82% being the highest figure observed.

By 2011, compared to operations under monopoly packaging collection costs were reduced by 44% and, due to innovation driven by competition, sorting and recycling costs were reduced by 76%.

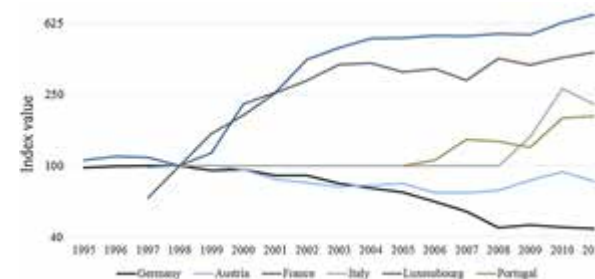
Importantly, through robust analysis, the study establishes causality i.e. that lower compliance costs were indeed attributable to the introduction of competition to the packaging compliance market.

The study compared the cost of packaging compliance in other European countries (see Figure 2). Compliance costs in France, Italy, Luxembourg and

Portugal – all operating monopoly schemes - increased over the period. Austria reduced costs because it began to introduce some elements of competition.

In the DSD experience government and industry wrongly assumed that a not-for-profit monopoly compliance scheme would prevent excessive charges. While a not-for-profit rule prevents profit, under monopoly it does not prevent inefficiencies in operations and excessive compliance costs.

Figure 2: Costs of packaging compliance in Europe, 1995 to 2011



Finally, on considering the experience of the DSD monopoly the study concludes that the costs of regulatory oversight under competitive systems necessary to achieve desired policy intentions are tiny compared to the cost of monopoly inefficiency.

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Please visit <https://www.valpak.co.uk/PackFlow2025> to access this summary report

Contact us

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- contact the PackFlow 2025 team

