

Creating a circular economy for leftover decorative paint in the UK



Note: This document is a high level overview of the progress and recommendations to date as part of the British Coatings Federation (BCF)'s leftover paint project PaintCare. It should be read in conjunction with the BCF publication 'A Resource Efficiency Action Plan for Decorative Paints' that was published in March 2015. Copies are downloadable at www.paintcare.org.uk.

Photography courtesy of: AkzoNobel, Crown Paints, Resource Futures, Newlife Paints, Veolia

PaintCare project - recommendations and interim report

Executive summary

In the 12 months since the All Party Parliamentary Sustainable Resource and Manufacturing Group's recommendation to create a Resource Efficiency Action Plan for Decorative Paint, significant progress has been made, bringing together the key stakeholders from paint manufacturers, remanufacturers, retailers, waste companies, local authorities, community reuse organisations and central Government.

Based on the British Coatings Federation (BCF)'s recent consumer research, almost half of the 71,500 tonnes of decorative paint that is leftover every year is entering the general waste stream, and of the other half that gets in some way segregated from general waste, only 2% is reused or remanufactured and the remainder is incinerated, generally without energy recovery.

So why is leftover decorative paint entering the general waste stream, when in theory liquid paint should only be disposed of as hazardous waste (even though 80% of leftover decorative paint is waterborne and does not include hazardous materials)? This is caused by several factors – the majority of Household Waste Recycling Centres (HWRCs) don't accept liquid paint (only one in three accept it), with cost and space concerns cited anecdotally as reasons why not, and householders are therefore often left with no choice but to dispose of paint in general waste (two thirds of which ends up in landfill) and only 1% follow WRAP guidelines to solidify the paint first.

However, the BCF's PaintCare project's working groups have established that there is an alternative solution, which can both solve the landfill problem, and also reduce costs to local authorities. Sorting paint for remanufacturing, instead of disposing of it as hazardous waste, will allow manufacturers, existing and new, to build new supply streams for potentially valuable recovered raw materials and develop markets for recycled paints. A process to collect waste paint is absolutely vital in developing such markets and local authorities are uniquely placed to make this happen.

Paint manufacturers of all sizes have demonstrated willingness to invest in such solutions, with several million pounds already invested in either commercial ventures or supporting social enterprises, but there needs to be a partnership between industry, local and central Government and the social sector to make paint remanufacturing happen on a national scale.

So why should Government get involved? In essence, managing leftover paint this way will deliver significant savings for local authorities, reduce waste to landfill and create a new circular economy. However, as has been established in several failed paint remanufacturing operations, the key to success is developing a market for leftover paint, and this report calls for Government to act, by insisting on five percent of Government painting contracts to use paint products with a significant percentage of remanufactured content. It will also be important to establish the knowhow to use the waste paint not suitable for remanufacturing as a raw material for other products such as concrete, as opposed to incineration as hazardous waste, if the 40% cost savings foreseen are to be delivered.

The key roadblocks have been identified, outlined in the 15 recommendations below, and the next 12 months will be spent working closely with all involved to try to remove some of the remaining obstacles to creating a new remanufacturing sector which also solves a major household waste issue and at lower cost to all stakeholders.

Peter Jones OBE,
Chair of the BCF
Leftover Paint
Steering Group



PaintCare project recommendations

(numbers after each recommendation relate to occurrence in main report)



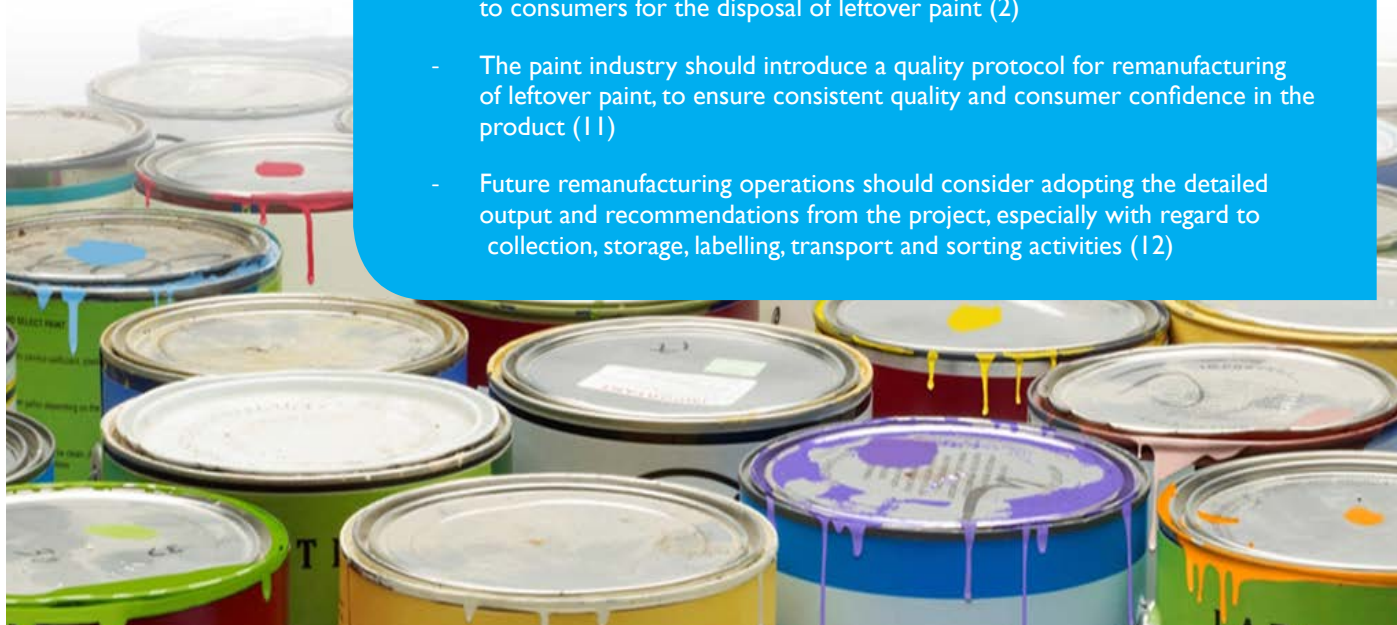
General recommendations

- All stakeholders involved in facilitating a national circular economy for leftover paint to sign up to the PaintCare voluntary commitment (13)
- PaintCare signatories should launch a major national education campaign to help raise awareness of paint recycling to the public, once a sustainable business model is in place (7)
- Waste packaging stakeholders should identify the optimum method for disposal/recycling of the annual 14,000 tonnes of waste packaging that is generated every year (8)
- The paint industry, waste industry and academia to work together to find solutions to use leftover paint as a raw material in other products like concrete for leftover paint that can't be reused or remanufactured (6)



Recommendations for the paint industry

- Paint manufacturers and retailers are encouraged to continue to develop tools and advice to consumers to purchase the right amount of paint for the job (1)
- Paint manufacturers and retailers to promote consistent, agreed upon guidelines to consumers for the disposal of leftover paint (2)
- The paint industry should introduce a quality protocol for remanufacturing of leftover paint, to ensure consistent quality and consumer confidence in the product (11)
- Future remanufacturing operations should consider adopting the detailed output and recommendations from the project, especially with regard to collection, storage, labelling, transport and sorting activities (12)



Recommendations for central Government

- Government should exempt reused, recycled or remanufactured paint sales used by social enterprises, charities or community based groups from VAT and such organisations should be exempt from business rates (4)
- Government should stimulate a remanufactured paint market and change Government Procurement Rules to specify five percent of Government painting contracts use paint products with a significant percentage of remanufactured content, helping to create part of the market for 10 million litres of remanufactured paint that could be produced (5)
- Government should ensure that regulations required to transport and use leftover paint (due to classification as waste) do not create burdens on establishing remanufacturing operations (9)
- Government should support the assertion that REACH regulation article 2.7 (d) applies to leftover paint (remanufacturing a product of known composition) (10)
- Government departments should proactively and transparently assist projects such as PaintCare by providing the information and support to help meet programme targets (14)
- Government should work with the paint industry to identify alternative funding mechanisms to help pay for the remanufacturing costs if an economic model cannot be established (15)



Recommendations for local Government

- Local authorities and the waste industry should promote consistent, agreed upon guidelines to consumers for the disposal of leftover paint (2)
- All HWRCs to agree to accept liquid paint, unless there are significant barriers preventing this, to stop the landfilling of leftover paint that enters into the general waste stream (2)
- Industry (paint manufacturers, retailers and waste companies) and Government (local authorities/WRAP) to promote consistent, agreed upon guidelines to consumers for the disposal of leftover paint (2)
- Government should enable the use of landfill taxes to support social enterprises, charities or community based groups committed to establishing paint re-use and recovery to grow from 0.5 million litres to 3 million litres by 2020 (3)



Background



In December 2014, leftover paint was referenced by then Defra Secretary of State, Dan Rogerson MP, as an emerging and new remanufacturing sector that could both help solve a major landfill issue, and also create jobs and growth at the launch of the All Party Parliamentary Sustainable Resource (APSRG) & Manufacturing Group (APMG) Triple Win Remanufacturing Report.



Government, waste contractors, retailers and third sector organisations to establish how to create a circular economy for leftover decorative paint. In May 2015, PaintCare was launched by the British Coatings Federation as the brand to give the project an identity. The aims of the project are to stop the landfilling of paint and create a new reuse/remanufacturing sector producing millions of litres of paint per year (see back page for a list of organisations involved in the PaintCare project so far).



One of the key recommendations from the report was for Government to commission a Resource Efficiency Action Plan (REAP) for Decorative Paint, given that 55 million litres (71,500 tonnes) of paint are leftover each year, and over 90% of this is either incinerated or landfilled when home owners try to dispose of it.

In March 2015, the coatings industry took the lead and produced the REAP, which has led to self-funded project involving key stakeholders from the paint industry,

A cross industry / Government steering committee was established, as well as three working groups – the first to look at the scale of the issue, consumer behaviour and identifying new markets for leftover paint; the second to look at regulatory barriers including 'end of waste' requirements, REACH, VOC and biocide legislation; and the third at the collection and remanufacturing processes. As a result of meetings with the project's steering committee and each working group, 15 recommendations have been created, which are summarised in this interim report.



Case studies

In the past five years, the paint industry has already invested several million pounds in projects to support reuse and remanufacturing of leftover paint.

Crown Paints

Crown Paints have supported Nimtech, a social enterprise that helps support socially disadvantaged in local communities to sort leftover paint for reuse in Crown's manufacturing facilities.



AkzoNobel

AkzoNobel have financially supported the national Community Repair scheme, which provides reuse for almost 500,000 litres of paint in community projects each year, from 75 locations. AkzoNobel have also supported Newlife Paints, a paint remanufacturer in Sussex.



Newlife Paints

Newlife Paints was an early innovator developing methods of collecting, reprocessing and recycling waste emulsion paint. The company is UK-based, but already has licences granted in Europe, and is increasing production as demand grows.



Craig & Rose

Craig & Rose have supported and advised Re-Paint Scotland and Castle Re-Paint for three years. This included working with the local Council to gain some traction in the use of re-manufactured paint.



Veolia

Veolia has recently opened a paint remanufacturing facility at its Stewartby site in Bedfordshire. This allows the company to assess first-hand what technical and engineering challenges exist when recycling paint.



The size of the problem

The BCF commissioned a leftover paint survey by Ipsos MORI in July 2015 with a nationally representative sample of adults. It established that the average household in the UK has six cans of leftover paint, and each year 12% of paint sales, or 55 million litres are leftover (an estimated 71,500 tonnes), so as old paint is disposed of, it is replaced by more leftover paint year after year in our sheds and garages.

Most people have leftover paint because they are keeping it for repair/touch ups in the future, but 30% of people reported over purchasing. Whilst exact advice on how much paint is needed is very difficult to produce (we all paint differently, and different colours/substrates have different coverage) new tools / calculators can be developed, utilising new technology where possible.

The research also established that 62% of respondents use their HWRC at least once per year, pointing to the importance of the HWRC network as a means of disposal for leftover paint.

One of the major issues however, is that only one in three HWRCs accepts leftover paint currently.

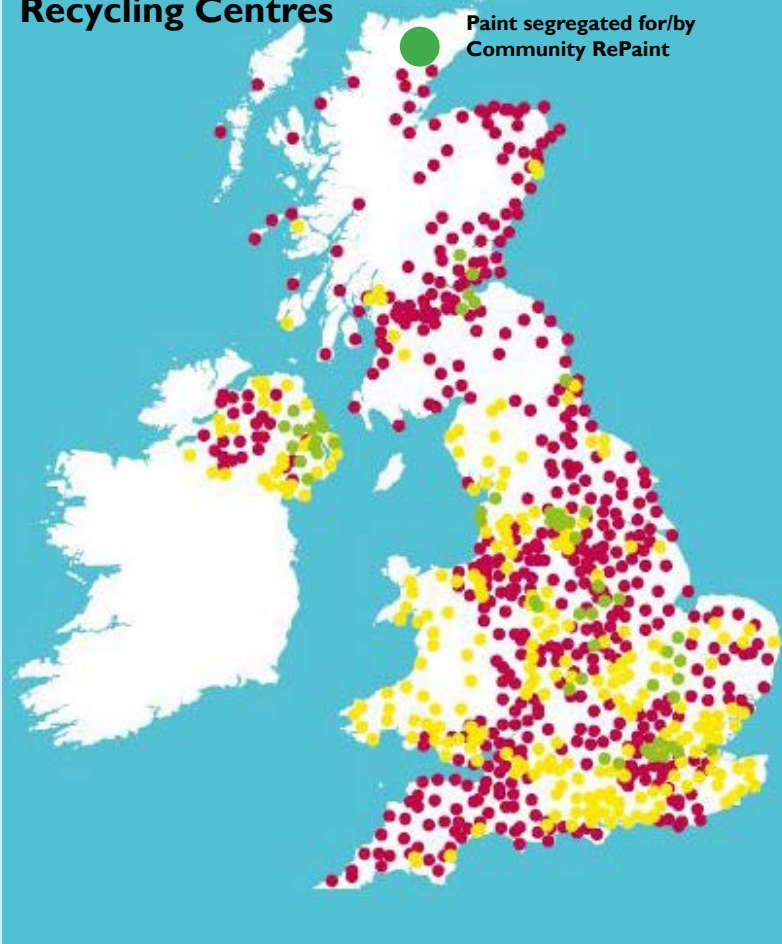
Recommendation 1

Paint manufacturers and retailers are encouraged to continue to develop tools and advice to consumers to purchase the right amount of paint for the job.

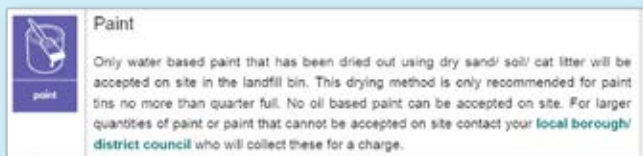


Paint Collection at Household Waste Recycling Centres

- Do not collect paint
- Paint accepted but treatment unknown
- Paint segregated for/by Community RePaint



Further, the advice offered by WRAP and local authorities does not promote reuse or remanufacturing of leftover paint to consumers. For example, current WRAP guidelines are to solidify and landfill paint and many local authorities are offering the following advice:



Local authority concerns about segregating and managing waste paint include:

- Costs (liquid paint is disposed of as hazardous waste)
- Viability of the service and in particular the reliability of end markets for the waste paint. Sites may be reluctant to start a new service they fear may need to be withdrawn in future
- Impact on other services provided at the site, impact on site users and customer satisfaction and impact on staff (additional responsibilities)
- Lack of space
- Lack of awareness of recycling alternatives



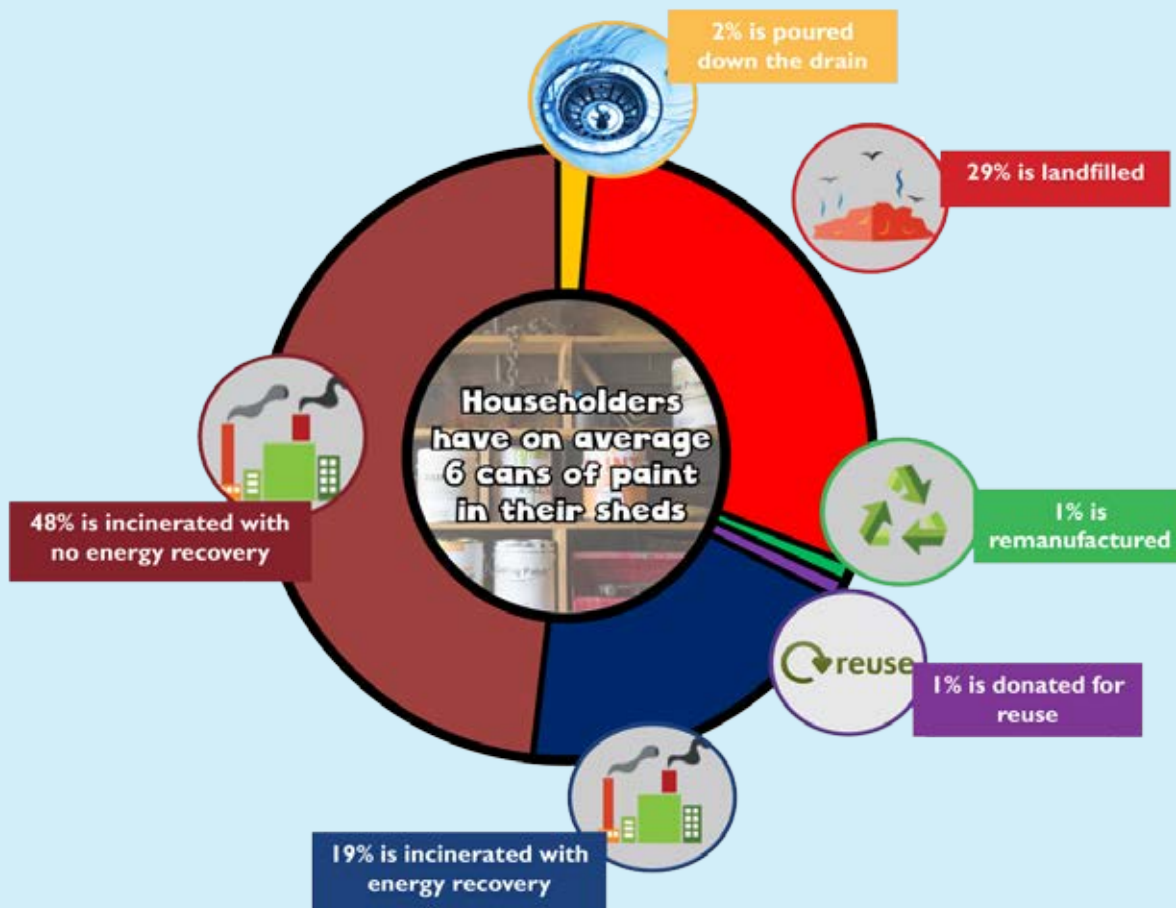
The BCF's research found that only 1% of people follow the above advice to solidify paint before disposal, but 48% of people are putting liquid paint into the general waste stream, either in their black bin bags or at HWRCs. The chart below shows where leftover paint ends up (based on the BCF MORI poll from July 2015).

Further research is planned in this area in early 2016. However, if other recommendations are taken on board from this report, and remanufacturing taken to a significant scale, costs for local authorities will actually be lower in the future, when a market is established for remanufactured paints and a network of remanufacturing hubs is established. However, recommendation 2 should not be taken in isolation but as part of a total solution.

Recommendation 2

Stop the landfilling of leftover paint that enters in the general waste stream by:

- all HWRCs agreeing to accept liquid paint, unless there are significant barriers preventing this.
- industry (paint manufacturers, retailers and waste companies) and Government (local authorities/ WRAP) to promote consistent agreed upon guidelines to consumers for the disposal of leftover paint.



The cost of landfilling and incinerating paint

Table 1 - Estimated paint disposal costs to local authorities – modelled on UK averages

Disposal route	Cost/tonne	Estimated amount (%)	Estimated amount (tonnes)	Total cost to LAs
Remanufactured	£200	1%	715	£143,000
Donated for reuse	£200	1%	715	£143,000
Reuse as raw material in (say) concrete	£50	0%	-	£ -
Hazardous incinerated (with no energy recovery)	£500	48%	34,320	£17,160,000
General waste (incinerated - energy recovery)	£100	19%	13,585	£1,358,500
General waste (landfilled)	£85	29%	20,735	£1,762,475
Goes down the drain		2%	1,430	£ -
		100%	71,500	£20,556,975

The estimated cost of disposing 71,500 tonnes of paint waste each year is £20.6 million to local Government. If paint waste is redistributed to reuse and remanufacturing schemes, there will be cost savings to local authorities, primarily because it is cheaper per tonne of waste to have it collected by a reuse/remanufacturing business than to dispose of it as hazardous waste. The table below shows local authorities' costs modelled when PaintCare is implemented nationally, with estimates for 2025, showing 40% lower costs for local authorities. Note the key to the success of this is finding a market for the remanufactured paint – see further recommendations below, and also establishing the viability of reworking a percentage of leftover paint as a raw material for other products such as concrete.

Table 2 - Paint disposal costs to local authorities - theoretical cost with proper segregation, all HWRCs accept liquid paint, disposal as hazardous WITH NATIONAL PAINTCARE PROGRAMME – 2025 Scenario

Disposal route	Cost/tonne	Estimated amount (%)	Estimated amount (tonnes)	Total cost to LAs
Remanufactured	£200	18%	12,870	£2,574,000
Donated for reuse	£200	15%	10,725	£2,145,000
Reuse as raw material in (say) concrete	£50	50%	35,750	£1,787,500
Hazardous incinerated (with no energy recovery)	£500	15%	10,725	£5,362,500
General waste (incinerated - energy recovery)	£100	0%	-	-
General waste (landfilled)	£85	0%	-	-
Goes down the drain		2%	1,430	-
		100%	71,500	£11,869,000

The solutions delivered by PaintCare are already being supported by the industry, either through technical development of new products and the new manufacturing processes required to deliver them or through support for social enterprises. A number of manufacturers also offer and finance take-back schemes for empty paint containers. Whilst the details of such investments by manufacturers are of course commercially sensitive, it is a reasonable assumption that the industry has already invested several million pounds in developing solutions for waste paint. In addition, the waste industry has started to invest in paint remanufacturing, with Veolia having recently opened a pilot plant in the Midlands.

Given that the PaintCare programme will save local authorities money, some of these taxes associated with landfilling should be invested in the waste infrastructure to support paint recycling and to help support reuse and remanufacturing programmes for leftover decorative paint, stimulating a great example of a new circular economy model.

The challenge for the economic model

There are major opportunities for both remanufacturing and reuse for leftover paint – estimated at 10 million litres for remanufactured paint and 8 million for community reuse schemes (30% less in litres than the weight in tonnes from table 2 as paint has a specific gravity of 1.3). However, creating sustainable economic models will be important for both, and they have very different drivers.

Social enterprise initiatives such as Community RePaint or Nimtech rely on many hundreds of volunteers to help remanufacture paint, and sell their products for £1-2 per litre to community groups or through charity shops.

By their nature, these schemes have previously lacked scale and sometimes the cohesion to provide a significant impact on the problem. However, with the whole UK ‘third sector market’ being valued at £34 billion, these social enterprises clearly have the potential to move significant volumes of paint.

Many of these schemes receive financial and other support and investment from various paint manufacturers as part of the ongoing commitment by the industry to develop worthwhile solutions to the problem of waste. The development of this ‘social’ market is particularly important because current technology suggests that the commercial recycling of the majority of waste paint is going to be challenging in the short-medium term.



Reuse programmes such as Community RePaint, with over 70 locations in the UK, and Nimtech reuse approximately 0.5 million litres per year, but this is only 1% of the total leftover paint each year.

Recommendation 3

Government should enable the use of landfill taxes to support social enterprises, charities or community based groups committed to establishing paint re-use and recovery to grow from 0.5 million litres to 3 million litres by 2020.

The growth in size of the community sector (this report calls for significant growth to 3 million litres by 2020), is currently limited in part due to the fact that if such enterprises expand, growth in turnover will leave them liable to VAT, and the need for bigger and more suitable premises will incur extra costs in business rates.

Recommendation 4

Government should exempt reused, recycled or remanufactured paint sales used by social enterprises, charities or community based groups from VAT and such organisations should be exempt from business rates.

The social market does not have infinite demand (estimated at 8 million litres by 2025) therefore, other routes to market are necessary to absorb up to 10 million litres per year of remanufactured paint.

In a more commercial environment, the economic model is more challenging, and several paint remanufacturing operations, such as Castle Repaint in Scotland and Green Farm Paints in the South of England have failed due to the lack of a market of remanufactured paint.

Stimulating demand by measures such as updating Government procurement rules on paint will be critical to develop a market for remanufactured paint products.

This has been a key driver for developing re-use schemes elsewhere. The state of California has mandated that all Government procurement of paints should include a mandatory recycled element, and local and national Governments in New Zealand have agreements in place to purchase back remanufactured paints for use on low grade work such as graffiti obliteration.

These schemes illustrate quite different solutions but both demonstrate the power of Government to create a market for a new technology and product at no extra cost to the tax payer. There is a precedent in another sector in the UK where the Government had created a requirement that 5% of Government purchases of furniture is remanufactured product.

Recommendation 5

Government should stimulate a remanufactured paint market and change Government Procurement Rules to specify five percent of Government painting contracts use paint products with a significant percentage of remanufactured content, helping to create part of the market for 10 million litres of remanufactured paint that could be produced.



Paint as a raw material in other products

It is estimated that 50% of leftover paint will not be suitable for remanufacturing. Rather than continue to incineration, an Innovate UK project is planned with several partners from industry and academia to establish the viability of treating this part of the waste stream and using it as a raw material in concrete.



Recommendation 6
The paint industry, waste industry and academia to work together to find solutions to use leftover paint as a raw material in other products like concrete for leftover paint that can't be reused or remanufactured.

Communication with consumers

An encouraging 41% of those sampled in our leftover paint research survey said they would be willing to purchase remanufactured paint. However, without a major communication programme, consumers will not be aware of the possibilities to remanufacture paint,



and to drop off their leftover paint at HWRCs and to buy the remanufactured paint products that the programme delivers. More detailed work in this area will be carried out on this once other recommendations have been implemented and an economic model established.

Recommendation 7
PaintCare signatories should launch a major national education campaign to help raise awareness of paint recycling to the public, once a sustainable business model is in place.

Packaging waste

Over 78 million plastic paint containers are used each year in the UK, and the majority of these go to landfill. This has not been the focus of the PaintCare project to date, but will be looked at in more detail in 2016. Currently plastic packaging is preferred for decorative paints, and several manufacturers are using packs with 25% recycled content. Metal packaging is also under consideration, given there is a readily acceptable current process for recycling.

Recommendation 8
Waste packaging stakeholders to identify optimum method for disposal/recycling of the annual 14,000 tonnes of plastic waste packaging that is generated every year.



Regulatory Considerations

A considerable amount of work has been done in trying to better understand how leftover paint is situated within a regulatory context. During the working group's investigation of Government regulations and how they might impact leftover paint, key areas of focus have included end of waste and REACH regulations.

The group has made use of the 'IsItWaste' tool provided by the Environment Agency and have established that leftover paint can be classified as end of waste within certain parameters.

In regards to REACH legislation, the project team has established that remanufactured paint best fits under section 2.7 (d) of REACH (remanufacturing a product of known composition with readily available Safety Data Sheets). The justification for this assertion is being prepared for final approval by the relevant authorities.

Decorative water based paint formulations are based on non-hazardous materials so there are no restrictions to their use by the general public. They have always been formulated to be safely used by consumers without concern for the presence of e.g. carcinogenic materials, when used in accordance with manufacturers' instructions.

Recommendation 10

Government should support the assertion that REACH regulation article 2.7 (d) applies to leftover paint (remanufacturing a product of known composition).

Recommendation 9

Government should ensure that regulations required to transport and use leftover paint (due to classification as waste) do not create burdens on establishing remanufacturing operations.



Remanufacturing standards

Results of the leftover paint research conducted by the BCF indicated that a major barrier to purchase of remanufactured paint products was the concern about the quality of the product. When asked why they would be unlikely to purchase remanufactured paint, 50% of respondents said they would be worried the paint was poor quality. To help improve consumer confidence in the product and ensure fitness for purpose of remanufactured paint, the BCF will be working on a quality protocol.

The project group recommends using the precautionary principle when it comes to labelling remanufactured paint i.e. to label as a worst case scenario paint in terms of VOC content, biocide content and levels.

Recommendation 12

Future remanufacturing operations should consider adopting the detailed output and recommendations from the project, especially with regard to collection, storage, labelling, transport and sorting activities.

Recommendation 11

The paint industry should introduce a quality protocol for remanufacturing of leftover paint, to ensure consistent quality and consumer confidence in the product.



The PaintCare voluntary commitment

In May 2015, the British Coatings Federation launched a voluntary commitment to solve the problem of landfilling leftover paint, and to create a circular economy (see below). The PaintCare brand has been launched to give the project an identity.



Our commitment

Company logo here

As part of our wider ambition to maximise use of resources, [insert company name] commits to help create a sustainable circular economy for leftover decorative paint in the UK.

We support the goals of the BCF's Resource Efficiency Action Plan for decorative paint:

- Stop the landfilling of over 20m litres of leftover decorative paint per year
 - Increase the reuse and remanufacturing of leftover decorative paint from 2% to 50%
 - Work with local and national Government, paint manufacturers, retailers, the waste industry and other stakeholders
 - Remove legislative barriers
- Help find new markets for remanufactured paint products
 - Facilitate a national network of paint collection and remanufacturing centres, bringing new job opportunities
 - Maximise the use of valuable raw materials and resources






Recommendation 13

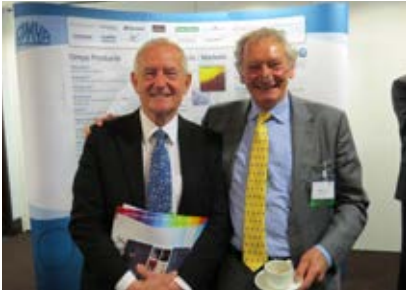
All stakeholders involved in facilitating a national circular economy for leftover paint to sign up to the PaintCare voluntary commitment.

There has been outstanding support for the voluntary commitment, with over 25 companies and organisations having signed.



Government support

Support from Parliamentarians



Barry Sheerman MP (left) with Peter Jones OBE (right)

In July 2015 an Early Day Motion was tabled by Rt Hon Barry Sheerman MP, the chair of the All Party Parliamentary Manufacturing Group, to support the PaintCare project, which has cross party support from 19 MPs.

'That this House encourages the remanufacturing of paint and seeks to increase the reuse rate of leftover decorative paint from two per cent to 50 per cent, decreasing the use of landfill sites for paint disposal; acknowledges that the paint industry is on the cusp of developing robust reuse and remanufacturing markets.'

Early Day Motion 300 in the House of Commons

Experience from around the world

The BCF and Community RePaint were invited by Defra to present the paint recycling and remanufacturing initiatives at the G7 Resource Efficiency Conference in Berlin in September this year, which helped raise awareness on a global platform. Several other countries have tried to tackle the issue, with both voluntary and regulated systems introduced in the USA, Canada, Australia and New Zealand to help finance and develop remanufacturing and reuse programmes. A close working relationship between Government and industry has been crucial in delivering these programmes around the world, and should be replicated in the UK.

Recommendation 14

Government departments should proactively and transparently assist projects such as PaintCare by providing the information and support to help meet programme targets.

Recommendation 15

Government should work with the paint industry to identify alternative funding mechanisms to help pay for the remanufacturing costs if an economic model cannot be established.

Contributing organisations

AkzoNobel
Ardagh Group
Association of Independent Merchants
B&Q
Bailey Paints
British Coatings Federation
BIS
BRE Global
Brewers
British Retail Consortium
Builders Merchants Federation
Building Research Establishment Environmental Assessment Methodology, BREEAM
Centre For Remanufacturing And Reuse, CRR
CEPE
Construction Products Association
Craig & Rose
Crown Paints Ltd
Dacrylate Paints
Defra
Ecolateral
Environment Agency
Environmental Services Association
Farrow & Ball Ltd
Fenton Packaging
Green Farm Paints Ltd
HMG Paints
Homebase Ltd

Little Greene Paints
Local Authority Recycling Advisory Committee
Local Government Association
Manor Coatings
National Association Of Waste Disposal Officers, NAWDO
Newlife Paints Ltd
Owatrol
Paint Research Association
Painting And Decorating Association
Policy Connect
PPG Architectural Coatings UK Limited
PRA
Recoup
Resource Association
Ronseal
RPC Superfos
Rustins
Sherwin-Williams Diversified Brands Limited
SRC Painting And Decorating
The Little Greene Paint Company Ltd
Valspar
Veolia
WRAP
Zero Waste Scotland

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BRITISH COATINGS FEDERATION

The British Coatings Federation is the sole UK Trade Association representing the interests of the decorative, industrial and powder coatings, printing inks and wallcovering industries. The BCF's prime aims are to promote and to protect the interests of its members, to encourage the prosperity of the industry, to improve the business climate in which the industry operates and to provide an interface between the industry and the Government, other industry and non-industry organisations, the media and the general public.

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