



# **Product Stewardship Study**

## **Unused/Unwanted Paint and Paint Packaging in New Zealand**

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**Prepared by**



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## Disclaimer:

The opinions expressed in this report are those of the author and sector representatives only and do not represent those of the Ministry for the Environment or the Government.

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# 1. Introduction

This report provides a case study of current unused/unwanted paint and paint packaging recovery programmes in New Zealand and examines the potential impact that product stewardship legislation might have on this sector from the perspective of the paint industry.

Product stewardship is defined as:

*An approach whereby producers, importers, brand owners, retailers, consumers and other parties involved in the life cycle of a product accept a responsibility for the environmental impacts of the products through their life cycle. This can include upstream impacts from the choice of materials and the manufacturing process, through to downstream impacts from the use and disposal of products.*

Traditionally, product stewardship has manifested itself as producers developing programmes for the safe handling of their products once consumers have finished with them. These programmes can take a producer responsibility approach, being set up and run solely by a producer or group of producers, or they can take a shared responsibility approach whereby local authorities, retailer and consumers become closely involved.

The New Zealand Government is developing a product stewardship policy for New Zealand. To date, the Government's approach has been to encourage voluntary, industry-led product stewardship schemes.

A discussion document released in 2005 set out options for modifications to this approach. Key to these modifications is the potential for more formal regulation to make schemes more effective and stable. The Ministry for the Environment wants this study to look at the current issues with disposal and recycling of paint in New Zealand and determine whether there is a need for a more formal product stewardship approach to be taken, or if changes can be made to the current situation to improve performance.

The brief for this study was to examine the paint sector in order to get an industry view on how a national product stewardship policy could work most effectively and efficiently at a "nuts & bolts" level.

This report provides:

- a description of the paint industry and market in New Zealand;
- an overview of the environmental issues surrounding the disposal of post-consumer paint;
- a description of the current paint recovery programmes in New Zealand;
- an analysis of these schemes and future options against the Government's policy objectives;
- a review of how product stewardship legislation might interact with paint recovery in New Zealand.

A sector group comprising representatives from five paint companies (almost 100% of the market) and a specialist recycler assisted in the development and review of this case study in order to ensure that industry views were well represented.

## **2. Description of the Paint Sector**

The paint sector being investigated in this case study is the architectural and decorative market consisting of single pack paints, stains and clear applied by professional painters and homeowners to protect and/or beautify commercial and residential projects. It excludes the automotive, industrial and textured coatings markets.

Paints are mixtures of pigments (for colour), resins (for binding power), and other additives to make them easier to apply, faster-drying, etc. These ingredients are dissolved in either water or organic solvents.

### **2.1. Key stakeholders**

#### **Brand owners**

A snapshot of the major brand owners and their characteristics is presented in the table below.

		<b>Dulux</b> 	<b>Resene</b> 	<b>Wattyl Taubmans</b> 	<b>Benjamin Moore</b> 	<b>Other</b>
<b>Brands</b>		Dulux, Cabots, Intergrain, Dulux Professional, British Paints, Levene, Berger	Resene	Wattyl Taubmans	Benjamin Moore	(incl Reid Paints)
<b>Market share (approx)</b>		36%	36%	23%	<5%	Less than 1%
<b>Market rank</b>	<b>Retail</b>	1	3	2	4	5+
	<b>Trade</b>	2	1	3	4	5+
<b>Control own retail network</b>		no	yes	no	yes	yes
<b>Retailer</b>		Mitre10 Guthrie Bowron Bunnings Placemakers Carters	Resene ColorShops	Placemakers Mitre10 Colour Plus ITM, Bunnings Carters	Benjamin Moore Aalto Colour	Reid
<b>Manufacture</b>		yes	yes	yes	yes	yes
<b>Import</b>		yes (small quantities)	no	no	no	no
<b>Export</b>		yes	yes	no	yes	no
<b>House brands (for others)</b>		Colour Your World, Results, Decorators Choice Valspar	no	no	no	no
<b>Paint % by base type</b>	<b>water</b>	80%	90%	80%	82%	no
	<b>solvent</b>	20%	10%	20%	18%	no

## **Consumers**

The consumer market for paint is an even mix of 50% retail and trade sales. However, this mix is changing, albeit slowly. There is a general industry consensus that the DIY market is shrinking in New Zealand. This is happening as a result of growing disposable income, less time available for DIY and less knowledge of how to paint.

New Zealanders are moving away from Do It Yourself (DIY) to an increasing Do It For Me (DIFM). The trend can vary depending upon economic circumstances. At the margin, if people feel more affluent they get others to paint for them, if not they apply paint themselves.

## **Recyclers**

There are companies that specialise in the recycling of paint. Some take solvent-borne paint and distil the solvents for recycling. Others remanufacture paint from waste paint for resale.

Key players are:

- Transpacific Technical Services (TTS) – collect and treat chemical waste throughout the North Island at facilities in Auckland and Wellington. TTS recovers solvents from paint waste in Auckland and Wellington. This paint waste is made up of pre-consumer paint from major manufacturers and post-consumer paint waste coming from Hazmobile collections and Enviropaints (re-manufacturer).
- Medichem – recovers solvents in Auckland
- Enviropaints – remanufactures water-borne paint in the Wellington region from recovered paint sourced in the North Island. Any solvent-borne paint they collect is sent to Transpacific Technical Services for recovery.

There are also two smaller-scale, solvent recovery operations in Christchurch. The recycling sector is further described in section 4.2 below.

## **2.2. Size of market**

The total size of the decorative paint market in New Zealand is 25 million litres per annum and around \$250 million at wholesale level.

### **2.3. Market share breakdown**

Estimated market share (based on industry opinion):

Resene	36%
Dulux	36%
Wattyl	23%
Rest	5% (mostly Benjamin Moore – Reid Paints plus others total less than 1%)

The majority of paint sold is water-borne and this market share is growing. It is estimated that over 75% of paint on the market is water-borne pigmented paint, with 12-13% solvent-borne pigmented paint, and 9-10% stains/clears (water-borne and solvent-borne).

### **2.4. Product imported vs New Zealand-made**

There are only small quantities of paint imported by paint companies in New Zealand. Dulux imports a small amount of paint but also exports (mainly to Australia).

There is a very small amount of imported product that is being placed on the market that comes in with labelling that is not consistent with New Zealand labelling standards. This is against New Zealand regulation and industry has advised that so far there has been no regulatory enforcement.

It appears that imported product does not represent a significant portion of the New Zealand paint market. However, there was concern expressed by some parties that the possibility of “cheaper”, inferior quality paint being imported did exist. If the New Zealand industry was to be regulated for product stewardship would imports be regulated and policed effectively?

All four of the major players have manufacturing facilities in New Zealand. These facilities are all located in Auckland or Wellington. Some companies export product to the Australian market (Resene, Dulux and Aalto Colour) from their New Zealand manufacturing facilities.

### **2.5. Trends in the market**

There are some observable trends in the paint market that have some relevance to product stewardship for the sector.

- There is a clear trend in manufacture of paint away from solvent-borne paints and towards water-borne paints. Most companies now have the majority of their products as water-borne. Watty! Taubmans, for example, now sells 80% water-borne paint and only 20% solvent-borne. For Resene, the split is 90/10 (see table in section 2.1).
- The industry reports that sustainable design considerations have become a topic of interest recently and will be of increasing importance. This is likely to be one of the factors in the move away from solvent-borne paint to water-borne. It is also likely to result in increasing attention being paid to the environmental performance of paint products.
- The paint market is mature and increasing slowly in size. Trade sales are growing while retail sales are stagnating, or even moving backwards. This move towards growing trade sales is a result of improved economic conditions and an increase in construction. As economic conditions slow, there is a move back towards DIY painting.
- Consumers are moving towards more purchases of 10-litre paint pails and away from the smaller-sized containers. This shift is primarily due to perceived reduced cost per litre on the larger size and a growing willingness to store leftover paint.
- Due to health and safety concerns around lifting, there have been some industry moves to reduce the use of 15+ litre containers.

### **3. Issues with the Disposal of Post-Consumer Paint**

The inappropriate disposal of paint into drains and waterways, and through leaching in landfills, is the main environmental concern driving the collection of post-consumer paint. Paint in waterways can have negative effects on aquatic life. Growing levels of spills and pollution incidents through inappropriate disposal have driven councils to implement paint collection programmes alongside collections of other wastes considered hazardous to the environment.

In the Auckland region, for example, the number of pollution incidents involving paint has resulted in the dedication of significant resource, and therefore cost, to investigation and enforcement action. In the period 2003 to 2005, there were 294 complaints about paint pollution logged and investigated by the Auckland Regional Council<sup>1</sup>. This figure represents more than 8% of the total 3,670 pollution complaints received by the Council over that period.

Water-borne paint is considered to be less of an environmental concern than solvent based paint. There is a strong shift in paint manufacture away from solvent based paints to water-based paints. Some issues with the disposal of older paint that may contain more toxic substances (eg lead) still exist, but these are diminishing as legacy volumes decline.

The disposal of paint packaging does represent a significant waste of resources. There is an avoided resource burden through the recycling of steel and plastic packaging waste. It is estimated that 25% of materials associated with post-consumer paint is steel and a further 6%, plastic. Both of these materials are potentially recyclable (although the plastics reprocessing industry considers paint-covered plastic too contaminated as it is difficult to handle and recycle).

There is little detailed information worldwide on the environmental impacts of the disposal of waste paint. Research and sector-wide consultation has not revealed any useful sources of information to enable a quantifiable assessment of environmental impacts.

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<sup>1</sup> Rowan Carter, Pollution Control Team Leader, ARC pers. comm.

## 4. Paint Recovery Programmes in New Zealand

### 4.1. Rate or landfill levy funded Collections

Post-consumer paint is collected through household hazardous waste collections by local and regional councils in parts (but not all) of New Zealand. Services are supplied in Auckland, Bay of Plenty (some communities), Hastings, Napier, Wellington (including Hutt City) and Christchurch. This includes collection by hazardous waste vehicle, “Hazmobile”, and/or collection at transfer station facilities.

In some cases, residual paint collected at council transfer stations is made available to members of the public for reuse. Otherwise collected paint is taken by service providers for processing.

#### 4.1.1. Hazmobile process

These are publicised “event days” where members of the public are invited to bring Household Hazardous Waste (HHW) to a site (usually a car park) and trained staff take from them the hazardous goods (including paint, oil, batteries, chemicals, etc).

Typically, paint is more than 50% of total volume received. The HHW process did not anticipate taking significant paint volumes and this has put strain on resources and costs<sup>2</sup>.

The paint is sorted on the day by a contractor into two streams

- Solvent-borne and water-borne deemed unsuitable for recycling – approx 60%
- Water-borne deemed suitable for recycling – approx 40%

The solvent and unsuitable fraction is recovered or stabilised and disposed (at cost to councils) to landfill.

The water-borne deemed suitable for recycling is taken away for decanting and processing into re-created paint for sale either back to councils for graffiti abatement or through retail to the public. In the Wellington and Auckland regions, this link with the Hazmobile is made by Enviropaints. The Enviropaints process is described further in section 4.4, below.

The Hazmobile contractor is paid per kilogramme for product taken away for recycling and a site fee for attendance at the collection day.

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<sup>2</sup> Source: Auckland Regional Council

Any product subsequently deemed unsuitable for recycling after opening is returned to the area where it came from for stabilisation (not always) and disposal (at cost to councils) to landfill.

Packaging is recycled where possible.

#### *4.1.2. Transfer station collections (Christchurch example)*

Only a few councils have any systematic (open every day) process for public drop off of unused/unwanted paint. Christchurch is an example.

The three transfer stations in Christchurch collect approximately 84,000 kg of unused/unwanted paint and packaging per annum plus an unmeasured quantity of paint deemed suitable for re-sale.

The paint deemed suitable for re-sale is sent to the Council's Supershed (second-hand goods) business for re-sale.

The solvent-borne paint fraction is sent for solvent recovery at cost to Council.

The water-borne fraction is consolidated for disposal at cost to Council.

No special charges are made at the transfer stations for the cost of disposal of the paint and packaging materials they receive. The cost of this process was not available for public disclosure.

## **4.2. Manufacturing waste**

Paint manufacturers in New Zealand produce waste as a by-product of their manufacturing processes. They also have surplus product that occasionally needs to be disposed of. Where possible, "bad" batches are "cleaned" and returned into the manufacturing process.

These wastes are usually managed by recycling service providers such as Transpacific Technical Services or Medichem, both of whom specialise in recovering solvent waste.

Transpacific Technical Services operate facilities in Auckland and Wellington. Medichem operate a facility in Auckland. There are also two smaller-scale operators in Christchurch: Solvent Rescue and Solvent Refiners.

Solvents are extracted through distillation, resulting in reprocessed solvents and still bottoms. Still bottoms are stabilised and disposed of to landfill. The reprocessed solvents are sold as "gunwash" or "blanketwash".

Gunwash is a product used by panel-beaters to clean their spray guns. There is a good market for gunwash in New Zealand, and the product is often in short supply. Blanketwash is used in the printing industry to clean printing equipment. There is less demand for this product and it is sometimes used as an alternative fuel in kilns for example.

### 4.3. Industry product stewardship schemes

There is only one example of a post-consumer product stewardship scheme for paint in New Zealand. The scheme has been developed by Resene and began to be rolled out across New Zealand in September 2005.

#### 4.3.1. Structure of the Resene Paintwise programme

The Resene Foundation (TRF) has been established as a charitable trust and owns the Resene Paintwise programme. The trustees of the Foundation are a mix of Resene Paint Ltd (RPL) directors and staff and appropriate external trustees.

A programme manager manages the Paintwise programme under contract to the Foundation.

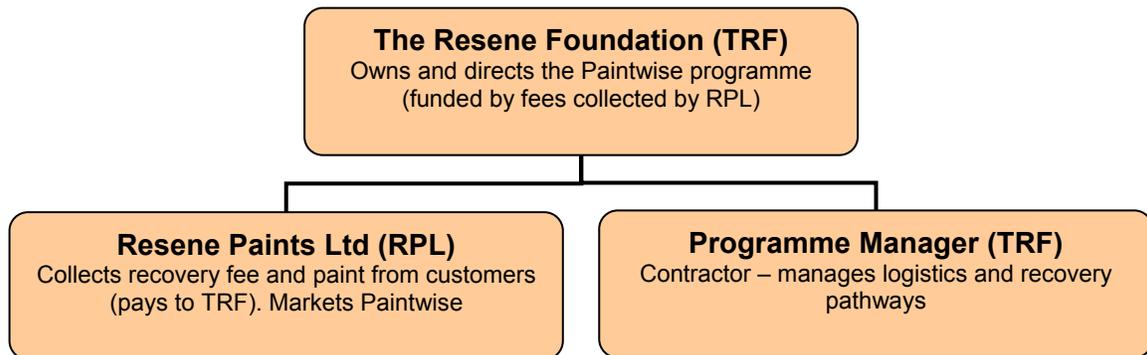


Figure 1. Paintwise Organisation Structure

The Paintwise programme is run on a not-for-profit basis.

The ongoing costs of running the Paintwise programme are met through a combination of fees paid on every litre of Resene paint sold, and fees paid by customers disposing of non-Resene paint. Any shortfall between operating costs and fee revenue is being met by Resene Paints Ltd. Any surplus arising from the programme is distributed by The Resene Foundation to charitable causes, such as hospices.

#### 4.3.2. *How Paintwise works*

The ongoing costs of the Paintwise programme are met in four different ways.

- i. **Paintwise Recovery Fee on New Product**  
A recovery fee is charged on all retail sales of Resene-branded paint in participating regions. The fee is 15c per litre and is shown to customers on their sales receipt.
- ii. **Non-Resene Paint Accepted for a Fee**  
Customers who bring non-Resene branded paint tins and pails for recovery to the Resene stores pay a fee. The initial price setting is:  
Cans/pails 10 litre and over      \$2.50 (incl. GST) per can/pail  
Cans/pails 4 litre and under      \$1.00 (incl. GST) per can/pail
- iii. **Commercial Sources Accepted for a Fee**  
Trade painters can use the Paintwise programme by paying a call-out fee which covers the extra cost of the truck going to their premises plus a levy (same as non-Resene levy regardless of brand) on paint collected/processed.
- iv. **Shortfall Met by Resene**  
Any shortfall between operating costs and fee revenue is met by Resene Paints Ltd.

The Paintwise programme started in 11 stores in the Auckland, Waikato and Bay of Plenty regions. These stores were chosen for maximum coverage and for their capacity to manage the returns process.

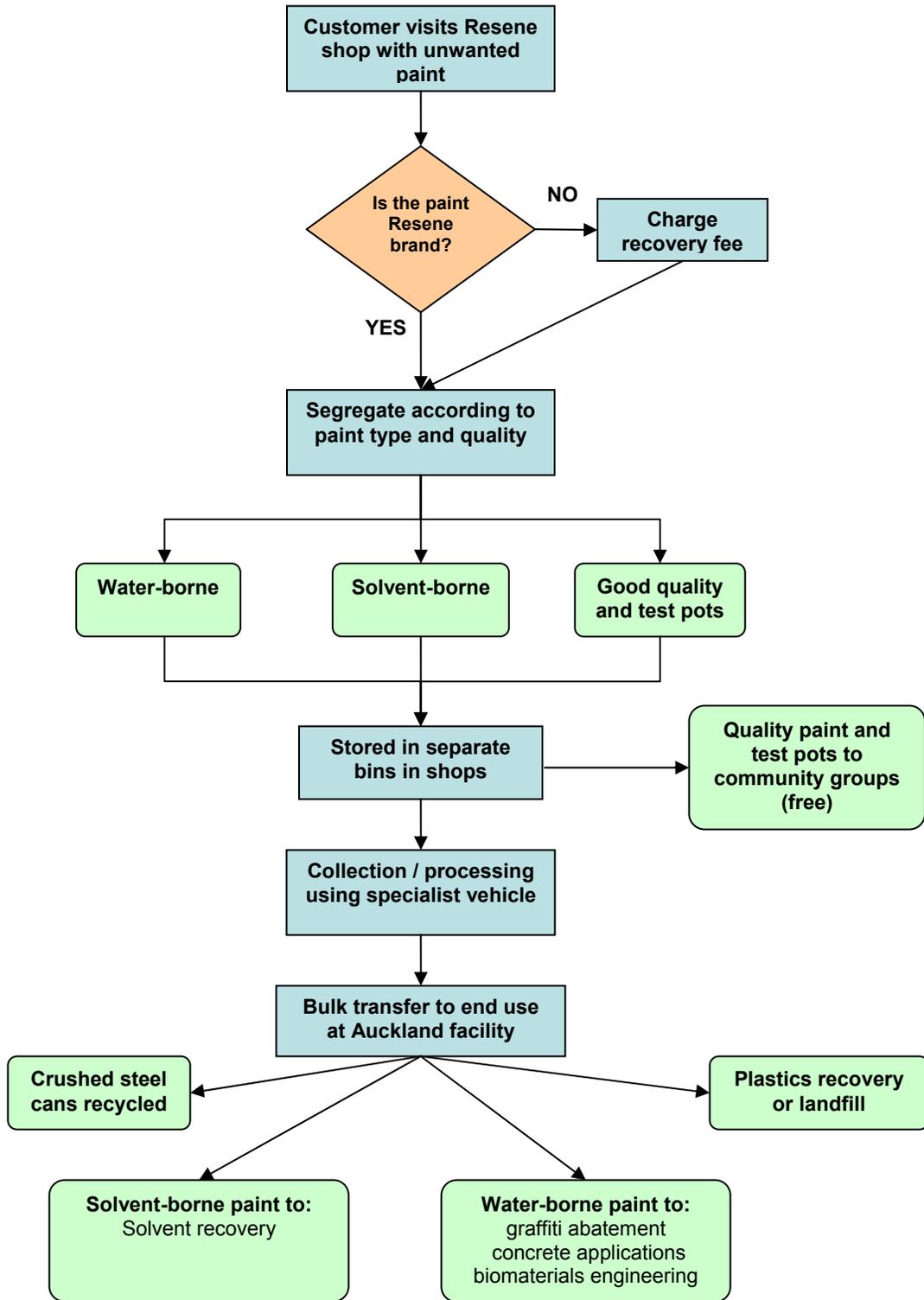
The programme is being rolled out to other parts of the country over the next 12 months. The next area (either South Island or Lower North Island) is scheduled to commence August 2006. The remaining area is scheduled for February 2007.

Comprehensive procedures have been put in place for in-store collections and transport operations. These include staff training, health and safety plans and spill contingency plans. The programme is in the process of achieving Enviromark certification.

The solvent-borne paint undergoes solvent recovery. The water-borne paint is being supplied to a range of parties for graffiti abatement. Apart from a small volume of sludges left after solvent recovery, no paint recovered has been stabilised and landfilled. The steel is being recycled. The plastic pails are currently going to landfill pending a suitable recycling process being found.

The programme is in its very early stages having only been going for six months at the time of this case study.

4.3.3. Flowchart of the Paintwise process



#### 4.3.4. *Paintwise performance to date*

The Paintwise programme is seeking to maximise the recovery of materials from the paint collected. For some materials, such as steel cans, there is a good market. For other materials, such as plastic, there are currently poor markets in New Zealand. Resene Paints Ltd has made its desire to maximise recovery clear from the outset of the programme. Material flows, based on the collection trial include:

- Good quality paint (13.5%) – donated to community groups
- Plastic (6%) – landfilled (see below)
- Steel (25%) – recycled
- Water-borne paint (31.5%) – currently supplied for graffiti abatement as well as research underway on alternative uses
- Solvent-borne paint (18%) – solvent recovery

Paintwise is investing resource and money into alternative uses for waste paint and plastic packaging. Scion (Crown Research Institute) has been commissioned to research opportunities for waste paint use. University research has also been started into the potential for waste paint use in concrete applications.

A research and development collaboration agreement with a major cement/concrete maker is currently being signed off and will shortly go into action.

Whilst all major plastics recyclers have indicated they are unable to currently use the paint-contaminated plastic, work is ongoing to find a beneficial use for the plastic.

As previously stated, the Paintwise programme started in September 05. In reality, the processing system was only available from mid October so any publicity about the programme was delayed until December 05 to allow the new collection and processing systems to be bedded in. Volumes were modest in the early stages. A bus shelter advertising promotion in December/January trebled volumes and these volumes have been growing since.

Non-Resene-branded paint and packaging represents approximately 50% of returns to store. The percentage breakdown of materials into community paint, solvent and water-borne fractions and packaging varies from month to month. At this early stage of the programme, the splits found in the trial seem to be reasonably accurate. A substantial increase in overall volumes is expected when the programme rolls out in the South Island in August 06.

#### **4.4. *Paint Remanufacturing***

There is one company in New Zealand that remanufactures paint. Enviropaints Ltd is owned by Reid Paints Ltd. Reid Paints manufactures specialist paints including architectural coatings, rubber membrane paints and roof paints.

Enviropaints takes empties and unwanted paint from Reid Paints as feedstock for their remanufacturing operation.

In some parts of the North Island (notably Auckland), Hazmobile collections supply Enviropaints with unwanted water-borne paint deemed suitable for recycling. Councils pay Enviropaints to take this collected water-borne paint away. Water-borne paint is remanufactured into Environmental Choice-labelled paint. This is then sold to the public through The Warehouse and to councils for graffiti abatement.

## 5. International Product Stewardship Initiatives

A sample of the varying approaches and stages of product stewardship around paint internationally is shown below.

### 5.1. *Paint Stewardship Program (British Columbia, Canada)*

Effective September 1994, the Post-Consumer Paint Stewardship Program Regulation required producers and consumers of paints to take responsibility for the management of their leftovers or wastes. To comply with this regulation, producers of paints developed province-wide paint collection depots.

The Product Care and the Tree-Marking-Paint Stewardship Associations are non-profit associations formed in response to provincial regulations requiring brand owners of paint to establish a collection programme for leftover paint products and waste.

Product Care's programme provides consumers with a method to manage unwanted paints and waste, which comprise as much as 70% of British Columbia's household hazardous waste stream.

Product Care operates more than 100 depots across the province for consumers to return leftover paint and paint aerosols. There is no charge to drop off paint leftovers accepted by the programme. The Product Care programme also offers the paint exchange programme, where usable leftover paint is offered free of charge to non-profit groups and low-income families.

The Tree-Marking-Paint Stewardship Association was formed by brand owners and distributors of industrial aerosol paint to manage industrial aerosol containers. Industrial aerosol paint is sold primarily in bulk to the forest industry or surveyors for the marking of trees, roads and other surfaces.

With the enactment of the *Environmental Management Act* (EMA) on July 8, 2004, the *Waste Management Act* and the *Environment Management Act* were combined to create a single statute governing environmental protection and management in British Columbia.

The Recycling Regulation, enacted in October 2004, replaced the Post-Consumer Paint Stewardship Program Regulation. As such, the Recycling Regulation provides the statutory basis for the existing paint product stewardship programme, as well as providing a legal framework for establishing new programmes.

## **5.2. Product Stewardship Institute (USA)**

Until recently, there have been no coordinated US-wide initiatives for the product stewardship of paint in the United States. It has been left to individual states, municipalities and some companies to take their own initiatives with mixed results. Some of the municipal-sponsored programmes have been curtailed or cut recently due to budget constraints.

The Product Stewardship Institute (PSI), a national non-profit organization, initiated dialogue on leftover paint in 2003 in response to concerns expressed by state and local government officials about paint's high volume in the waste stream, potential to impact human health and the environment, substantial costs to manage, and potential for increased reduction, recovery, reuse, and recycling. PSI estimates the cost to manage leftover paint on a national level to be over \$275 million per year.

As part of an agreement signed or endorsed by 45 state and local governments, the paint industry association, a major retailer, the association of painting contractors, and others, a plan was announced in April 2005 to reduce the environmental impacts and cost of managing leftover latex and oil-based paint.

Participants agreed to implement 11 projects, at a cost of USD1.2 million, over 18 months that would provide information necessary for the development of a nationally coordinated, leftover paint management system.

In 2005, the National Paint and Coatings Association's (NPCA) Board voted to continue its participation in the dialogue and support the research agenda by funding four projects targeting consumer education, paint reuse, a life cycle cost/benefit assessment of managing leftover paint, and the promotion of health, safety, and environmental compliance for recycled and virgin paint products. NPCA represents over 90% of the paint and coatings manufacturers in the United States.

The results of the 11 projects are not available yet.

## **5.3. Initiatives in Australia**

(Source: New South Wales Government)

About 61 million litres of household paint is consumed in Australia annually. About 11% is unused and is disposed of or stored, suggesting a potential waste stream of about 6.7 million litres (or 8,500 tonnes) per year.

Almost all paint producers or importers are members of the Australian Paint Manufacturers Federation (APMF). There are four major companies in the Australian market, namely, Orica, Wattyl, Barloworld and Akzo Nobel, with the

last manufacturer focussing only on industrial coatings. Between them, they have a combined market share of more than 50%.

The remaining 50% comprise several smaller paint manufacturers and importers, most of which are also members of the APMF. Paints comprised 45% (217 tonnes) of the material collected in the NSW Chemical Cleanout programme in 2003-04.

There is no industry contribution to this state government-run scheme. The cost relating to collection and recovery of paints under the programme is estimated to be more than \$700,000 per year.

The industry's current focus is only on educating and encouraging consumers to return unused paint to existing waste transfer stations and landfills and through the NSW Chemical Cleanout programme. The industry has stated that the cost of establishing and operating new infrastructure to recover leftover paints is prohibitive but the cost barrier has not been clearly demonstrated.

One or two companies have conducted trials on paint collection and reprocessing but there is no whole-of-industry approach. Trials have included:

- Collection of leftover household paint deposited at the Lucas Heights Landfill by Waste Service NSW (now WSN Environmental Solutions) and the APMF between November 2002 and May 2003. About 2,500 kg of light-coloured water-based paint was collected but only about 100 kg was reusable. Of the 2,016 cans collected, 92% were four-litre cans and under.
- A weekend paint collection trial by Orica (makers of Dulux paint), Bunnings, the APMF and EcoRecycle Victoria at a Bunnings store car park in Victoria in March 2003. About 1,800 litres of paint were collected and a portion was reconstituted and resold as fence paint.
- A second trial by Orica, Bunnings and EcoRecycle Victoria in conjunction with Chemsal and Blue Scope Steel. Leftover paint was collected over the counter in a Bunnings store for a one-month period in April 2004. About 42 tonnes of unused paint (including cans) were collected, of which 68% was water-based and 32% was solvent-based. From this, about 6,300 litres of water-based paint returned to the market as fence paint and 10 tonnes of metal cans were recovered for metal recovery.
- A third year-long trial has started recently in Victoria in one Bunnings store in Melbourne with the same partners as the second trial.

To date, there is no clear evidence of a national product stewardship scheme for paint emerging in Australia, although some tentative steps appear to be underway at a state level (Victoria only at this stage).

## 6. Performance of Programmes Against Government Policy Objectives

The Government has laid out its policy objectives for product stewardship in New Zealand. These objectives are contained within the Product Stewardship and Water Efficiency Labelling Discussion Document.

The purpose of this study is to examine the performance of current paint stewardship approaches and to look at ways in which government policy might help or hinder paint recovery from an industry perspective. Existing product stewardship paint initiatives have been examined against key questions and overall policy objectives in the table below. In the sections following the table we have examined potential tools for increasing product stewardship, including regulatory and non-regulatory.

	<b>VOLUNTARY INDIVIDUAL PRODUCER STEWARDSHIP (Paintwise example)</b>
<b>Brief description</b>	<b>Producers are encouraged and assisted to establish paint take-back and recycling programmes.</b>
<b>Key Questions</b>	<b>No regulation</b> <b>Paintwise is only current example of individual product stewardship.</b>
<i>Is there clear evidence of Product Stewardship approach/principles?</i>	Yes. Closes the loop between producer and end-of-life product. Individual approaches may have varying degrees of involvement from other stakeholders. Paintwise involves brand owner and its retail arm. Government involvement is limited to education and promotion of the scheme and assistance with start-up costs.
<i>Level of environmental performance &amp; impact reduction?</i>	The individual voluntary approach allows individual producers to set the performance criteria for their products. Paintwise has taken an approach that maximises recovery and reduces disposal and has clearly stated this in the development of the programme. Other schemes developed under this voluntary approach may not match these standards, or may exceed them.
<i>How is the scheme funded &amp; at which point?</i>	Flexible, at discretion of individual producers. Can be internalised or a visible fee can be placed at point of purchase. Paintwise is funded through a visible fee placed on every litre of paint sold by Resene (or at point of return for non-Resene). The fee is paid by Resene customers (retail only) every time they purchase paint.
<i>Who primarily operates and/or manages the scheme?</i>	Individual producers operate the scheme. Paintwise is owned by a trust linked to the brand owner and managed under contract by a programme manager.
<i>Is the problem served by a collective or individualistic approach to PS?</i>	An individualistic approach currently exists and has successfully resulted in one producer creating a scheme, and others are becoming interested in a similar approach.
<i>Ability for the scheme to specify &amp; measure targets and Key Performance Indicators (KPIs)</i>	Individual producers have the freedom to set their own targets and KPIs for schemes. Paintwise programme has targets and KPIs agreed with the programme manager.
<i>Ability for the scheme to set standards for collection &amp; materials processing</i>	Standards set by individual producers according to their requirements. No industry-wide standards exist.
<i>Evidence of data collection, evaluation and monitoring?</i>	There is no regulatory requirement for voluntary producer schemes to collect data or monitor performance. Data collection is for measuring programme performance against key deliverables. Paintwise has a tracking and reporting system that enables the collection of data from shop take-back to material processing routes.

	<b>VOLUNTARY INDIVIDUAL PRODUCER STEWARDSHIP (Paintwise example)</b>
<i>Reporting to stakeholders? What? How often? Verified? Audited?</i>	Public reporting is optional as a component of a voluntary scheme. Sharing of data and information with councils and the public is seen to be beneficial to the programme. Paintwise reports to councils on programme performance but is not currently contracted to, or has any obligation, to do so.
<i>Scheme costs for industry/government/consumers?</i>	Burden of costs on individual producers and therefore <b>customers</b> . <ul style="list-style-type: none"> <li>• Industry – costs of set up and implementation for individual companies. Ongoing costs met by levy</li> <li>• Consumers – fee on some producers paints</li> <li>• Local government/ratepayers – some assistance in set up. No ongoing costs</li> <li>• Central government – some assistance in set up. No ongoing costs.</li> </ul>
<i>Benefits to participants and/or government, of the scheme?</i>	<ul style="list-style-type: none"> <li>• Industry – market differentiation for those offering stewardship, control over end-of-life product</li> <li>• Central government – problem is being dealt without significant input from government</li> <li>• Local government – reduced burden, and therefore costs, on paint collection programmes</li> <li>• Consumers – simple solution to paint disposal available all the time.</li> </ul>
<i>Does the scheme acknowledge and/or reward an LCA approach to product development and end-of-life management? How?</i>	Individual producers with schemes reap immediate benefits of any changes in design of product that makes those products more recyclable. For example, the Paintwise scheme would be able to pass savings on to consumers in the form of a reduced levy if recycling costs were to reduce due to changes in packaging design or paint recoverability.
<i>Does the scheme constrain or encourage innovation amongst producers, retailers, recyclers, government and/or consumers? How?</i>	The Paintwise scheme has had the flexibility to adapt to changing circumstances and to develop innovative solutions because it is not constrained by standard models.
<i>Is the handling of recovered materials and/or residual waste a safety or export issue? How significant?</i>	An estimated mix of materials coming from waste paint collections is: <ul style="list-style-type: none"> <li>• Good quality, reusable paint 13.5%</li> <li>• Water-borne paint 31.5%</li> <li>• Solvent-borne paint 18%</li> <li>• Plastic 6%</li> <li>• Steel 25%</li> <li>• Residual 6%</li> </ul> Handling of solvent-borne paint is the only safety concern. The majority of materials are easy to handle.
<i>Extent of residual wastes generated? What types? How significant?</i>	Residual waste streams (wastes that end up in landfill) from waste paint are: <ul style="list-style-type: none"> <li>• sludge from the solvent recovery process (recovery of solvents ranges between 25 and 80% depending on the mix of the paint batch<sup>3</sup>)</li> <li>• plastics – currently no recycling option exists, but this is being explored</li> </ul> Contaminated material – material that is too contaminated to be recoverable.
<i>Do the public and/or other participants understand the scheme?</i>	Paintwise is promoted through a range of internal and external media. The approach has been to bed the scheme in prior to any large-scale advertising campaign. To date, promotion has been limited to in-store promotion, trade magazine advertisements, word of mouth and, recently, bus shelter advertising in the Auckland region. There is the potential for public confusion if other producers develop parallel schemes.

<sup>3</sup> Paul Kennel, Transpacific Technical Services Ltd, pers. comm.

	<b>VOLUNTARY INDIVIDUAL PRODUCER STEWARDSHIP (Paintwise example)</b>
<i>Is orphaned product an issue? How significant?</i>	<p>Orphaned product is product manufactured or sold by parties that are no longer in the sector. Orphan product is not a significant issue when considering product stewardship of paint. There are only four key market players and there is therefore reduced risk of product becoming orphaned (not able to be assigned to an individual brand owner). Products are also typically bought, used and disposed of within a short timeframe, reducing orphan risk.</p> <p>Individual schemes can overcome the orphan issue by setting charges for brands of competitor paint. Resene Paintwise has set a fee for non-Resene paint collected at stores.</p>
<i>Is historical product an issue? How significant?</i>	Historical product is product that was on the market before a scheme came into existence. Historical product is not an issue for individual producer schemes because such schemes only undertake to take back own-brand products. Resene Paintwise accepts any Resene paint, no matter how old, and will accept other brands for a fee.
<i>Are free-riders an issue/potential issue? How significant?</i>	It is early in the development of voluntary product stewardship for the paint sector and there appears to be some interest from the key players in the market to participate in, or set up their own, product stewardship scheme.
<i>Is the scheme able to address imports &amp; locally manufactured product effectively/fairly?</i>	Not an issue. Almost all paint put on the market comes from four companies. Most of their paint is manufactured in New Zealand.
<i>Does the scheme represent a barrier to market entry? How?</i>	There is no barrier to market entry as schemes are voluntary.
<i>Collection/Recovery methods? Effective/efficient/Best Practice?</i>	Individual producer initiatives are not required to set in place minimum standards for treatment. Parts of the recycling industry would like to see a level playing field for service providers to ensure minimum environmental and safety standards are met by all players. Paintwise programme has clearly set out its standards for the recovery of paint waste collected by the programme. Future parallel schemes from other brand owners might use different methods for recovery.
<b>Performance of schemes against Government Policy Objectives</b>	
<b><i>Schemes should use a Product Stewardship approach</i></b>	<p>Individual product stewardship is being encouraged. Brand owners can create their own schemes to take back their own product (or choose to collaborate). This closes the loop between producer and end-of-life management of products.</p> <p>Paintwise uses a full product stewardship approach because it involves a producer taking physical and financial responsibility for its products.</p>
<b><i>Schemes should lead to environmental gains</i></b>	Paint collected by Paintwise is removed from the waste stream and recycled/recovered. Reduced risk of pollution. Reduced pressure on landfills. Avoided material extraction burden through material recycling. The Paintwise programme is also investing in research for alternative uses of waste paint. This could lead to further environmental gains.
<b><i>Schemes should be effective and efficient</i></b>	<p>Flexibility in the design of Paintwise has enabled efficiency to be maximised. The scheme is a commercial operation and therefore designed to be as efficient as possible to avoid undue cost to Resene. Entry to the scheme by other brand owners would improve efficiency through economies of scale.</p> <p>It is difficult to gauge the effectiveness of Paintwise at this early stage in the scheme. As volumes grow, the scheme is on track to reach its budgeted milestones.</p>

	<b>VOLUNTARY INDIVIDUAL PRODUCER STEWARDSHIP (Paintwise example)</b>
<b><i>Schemes should contain publicly reported, challenging performance measures, quantifiable where possible</i></b>	<p>There are no requirements for minimum performance standards, or the reporting of results. Individual schemes have the freedom to measure what they feel is important and what they report on. They are answerable only to shareholders and, to a lesser degree, customers.</p> <p>Collection and recycling targets for the Paintwise programme had full public disclosure at the outset and are being disclosed to supporting councils and through public media on a regular basis. Paintwise is in the process of obtaining Enviromark certification to ensure systems are in place for standards-based processing and continual improvement.</p>
<b><i>Schemes should be transparent</i></b>	An individual, voluntary approach does not require transparency for schemes, beyond compliance with any legal requirements. Although Paintwise is a commercial operation, the development of the programme and its associated standards has been transparent to the parties who assisted in its implementation.
<b><i>The benefits of any regulatory aspects should exceed their costs</i></b>	Not regulated.
<b><i>Schemes should not reduce market competition</i></b>	<p>No effect on market competition because an individual approach is taken, primarily for companies setting up schemes to gain competitive advantage. Schemes are the same as any other extra customer service.</p> <p>Paintwise has been set up by an individual company as an initiative to provide added value to customers and to “do the right thing”. It does not reduce market competition, rather it stimulates competition. Paintwise so far has not been collaborative, although it does allow for other paint industry players to join in the future.</p>
<b><i>Schemes should set safe standards for the collection &amp; handling of recovered material</i></b>	<p>Currently there are no minimum standards for collection and handling of waste paint by schemes set up by individual producers. This is particularly an issue for solvent-borne paint, which requires particular care when handling.</p> <p>Paintwise will be Enviromark (environmental management system) accredited and will therefore comply with regulatory requirements.</p>
<b><i>Schemes should provide a forum for communication &amp; to address any issues</i></b>	<p>Individual schemes in the current regulatory environment do not need to provide a forum for communicating issues from stakeholders.</p> <p>Paintwise is regularly discussed with the councils who have thus far assisted in its establishment in order to obtain feedback and to address ongoing issues. There is also a Paintwise website address for public feedback on the programme.</p>
<b><i>Schemes should include public information &amp; education components.</i></b>	Significant investment in publicising the programme. Resene advertising including website, brochures, leaflets, and point-of-sale material. Councils also promote the service.

## 7. Observations on the Current Situation

The industry believes that the toxicity of paint is small when compared with other types of special waste. The increased uptake of water-borne paint and decline in solvent-borne is reducing this toxicity further all the time.

Local authorities in some areas are running paint take-back programmes through existing infrastructure such as transfer stations and hazardous waste collection initiatives (such as Hazmobile).

Some local authority collections utilise the services of a paint remanufacturer (Enviropaints). These local authorities pay to have the paint transported to a facility in the Wellington region. This remanufactured paint is then sold to the public, or back to the councils. There can be a significant transport burden arising from this activity.

Producers have been encouraged by the Government to set up their own schemes for the take-back and recycling of paint. Only one paint manufacturer, representing approximately 36% of the paint market, has set up a scheme to date. The Resene Paintwise programme is aimed at the stewardship of all paint, funded by a levy paid by every Resene retail customer when they buy new paint. Paintwise also allows for other brands to be disposed of through the programme for a fee.

The ownership of retail stores is an important advantage when trying to put in place a product stewardship scheme. Resene has been able to implement Paintwise relatively simply because they own and control their retail outlets. Other brand owners report they have encountered resistance from retailers when trying to develop product stewardship initiatives. This is particularly the case when considering brand owners that sell product through large, multi-product retailers.

Service providers exist for the recovery of solvent from waste paint. There are no industry standards for the treatment of paint and this is raised as an issue of concern for the recovery sector, parts of which would like to see regulation in order to level the playing field for all participants.

## 8. Individual Producer Scheme Stability

The stability of a product stewardship scheme can be affected by three factors:

1. the existence of free riders;
2. the issue of how to deal with historical product; and
3. changes in product markets.

These issues can act as a barrier to establishing a product stewardship scheme due to fears of instability once the scheme is up and running. We have examined how these factors might affect the stability of the Paintwise product stewardship scheme.

### 8.1. *Free riders*

Free riders are producers that do not pay into a product stewardship system, but still benefit from the outcomes of the system. Free riders can create instability in a product stewardship scheme because they leave responsible brand owners to pick up the costs of managing all products in a market.

Paintwise is the only product stewardship (producer responsibility) scheme for paint currently operating in New Zealand and is, in part, underwritten by Resene itself. If the balance of the industry did not follow suit (or collaborate with the scheme) in some form then they might be regarded as “free riding” on the scheme.

However, Resene has developed the programme in order to both solve the end-of-life problems around unused/unwanted paint and to enhance its brand position in terms of environmental performance. It has done so with no concern for what other market participants might do at the same time. The Paintwise scheme has also allowed for other brands of paint to be accepted into the scheme for a fee paid at the point of drop-off (ie in the shops).

In addition to this, Resene has stated that it is open to other brand owners joining Paintwise and discussions have already been initiated. It can therefore be seen that Resene does not see free riding as a threat to the Paintwise scheme.

At this stage, it appears unlikely that the free rider issue will prevent the continuance of Paintwise. Resene has signalled it is in this process for the long haul, whether on its own or with other participating brand owners.

## **8.2. Historical and “orphan” waste**

Historical waste is product that was placed on the market before a product stewardship initiative began to operate. A product stewardship scheme is faced with the problem of financing the collection and processing of this “pre-existing” product.

Orphan waste is product that is on the market but the original producer has gone out of business or withdrawn from the market.

Product stewardship schemes are faced with picking up the cost of managing these historical and orphan products. In some instances the financial burden of dealing with these products is significant enough to prevent a product stewardship scheme being established. This barrier is particularly the case for long-life products (eg televisions) because these products remain in the market-place for a long period of time, and brands can change significantly during this time.

Paintwise deals with historical and orphaned waste by allowing consumers to drop off any brand of paint. Non-Resene paint is charged a fee at point of drop off, while Resene brand paint has had the fee charged at point of sale. Historical and orphan waste is therefore not an issue for the stability of Paintwise.

## **8.3. Change in product market**

Instability could also be caused by shifts in the market. For example, if there is a major shift to different types of paint, or if different packaging materials become more prevalent. This might shift the economics of recycling and make a scheme more expensive.

One identified potential for a product shift to happen in the paint market is a continuation of the trend away from solvent-borne and toward water-borne paint (currently 88% and 12% respectively of Resene paint sales). A continued shift would have the effect of reducing recycling costs and would not therefore impact on the stability of the scheme.

## **9. Does the Current Situation Need to Change?**

The industry believes the environmental effects that arise from the disposal of paint to landfill are not as great as those for other products. There has been a trend over the last 20 years away from solvent-borne paint and into water-borne paint. Now water-borne paint represents 80-90% of the paint market.

Some councils provide collection facilities (generally at a cost to the ratepayer) for waste paint which is then either recovered or landfilled safely. One brand owner, with almost 40% of the market, has launched a scheme to take waste paint from its customers. Other brand owners are strongly signalling their interest in participating in the Paintwise scheme, or in developing similar schemes.

It would appear that paint is on track to developing an adequate voluntary, industry-led stewardship solution. A combination of local authority and producer schemes could provide the answer to waste paint issues in New Zealand.

## 10. What Would Help Develop Product Stewardship for Paint?

There may be steps that can be taken to assist with the stewardship of paint. These potential tools reflect the views of the various sectors of the industry consulted during this study.

Parts of the recycling/recovery industry believe there needs to be a level playing field created for service providers to ensure all are competing equally. Setting standards for providers would help to ensure schemes meet minimum environmental criteria. An industry code of practice is one option that could be developed by recyclers.

Government agencies can assist through purchasing policies – requiring membership of stewardship programmes when purchasing paint product. There are significant opportunities to include stewardship requirements in tenders. This may come through the Govt<sup>3</sup> programme, an initiative to coordinate this sort of procurement practice ([www.mfe.govt.nz/issues/sustainable-industry/govt3/](http://www.mfe.govt.nz/issues/sustainable-industry/govt3/)).

An example given by one industry participant was Land Transport New Zealand's insistence on the continued use of lead-based yellow marker paint when there are far more benign alternatives available.

Central and local government could provide upfront funding and resources to assist in the establishment of stewardship programmes as establishment costs for schemes are high and this can be a barrier to beginning.

Government should provide an opportunity for the “registration” of schemes on a database (website) to enable learning to be drawn on by other industries setting up product stewardship schemes. Such a database would also provide government with updates on the progress of schemes and sectors. The system would need to be simple and not onerous.

Government needs to be active in providing information to educate the public about stewardship schemes. Education needs to encourage participation and explain the reasons behind any charges/fees being paid by consumers.

## **11. Would Product Stewardship Legislation/Regulation Help?**

The question from this industry is: “Is product stewardship regulation necessary for paint at all?”

In general, the paint industry believes it is already responsible in the way it manufactures and markets its products in New Zealand. All of its formulations are registered and it believes it is already subjected to exacting controls at a high level. It believes the products it brings to market are relatively benign and that there is little evidence of harm from the application of its products or their residual effects.

It believes paint should not be singled out for special treatment and that there are sectors (eg timber treatment) which should receive more attention .

The industry believes in self regulation rather than prescriptive central government “interventions”. Major brand owners are already members of “Environmental Choice” and have demonstrated the ability to walk the talk.

Examples include:

- the removal of lead from architectural coatings;
- the paint industry being a lead player in the implementation of the Hazardous Substances and New Organisms Act (1996).

## **12. Recommendations**

- Government should focus on continuing to encourage voluntary product stewardship for paint. This approach is starting to yield results with minimal bureaucracy.
- Assistance should be given to the recycling/recovery sector to develop a code of practice for the processing of waste paint. Such a code of practice could be a useful tool for product stewardship schemes to use when engaging service providers.
- Sustainable government purchasing of paint should be used to encourage improvements in the environmental performance of producers.
- Government should more carefully evaluate the environmental impacts of waste paint before deciding to place it on a priority list for product stewardship.