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Municipal Solid Waste – The Hidden Problem



A WASTEFUL WORLD

THE MAGNITUDE OF THE PROBLEM



The world is being buried under its own waste – alarmist or prophetic

80 per cent of consumer products will become waste within six months

Each Australian produces almost **700 kilograms** of municipal solid waste (MSW) every year

The UK Government says the country's landfill sites will be at **capacity** within seven years



THE LANDFILL LEGACY

CAN IT BE SUSTAINED?



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Almost three quarters of Australia's 10 million tonnes of MSW ends up in landfill

Toxic emissions to soil and water continue for hundreds of years

Landfill sites remain as **contaminated sites** more than 100 years after being de-commissioned

A tonne of waste landfilled today will be emitting **greenhouse gases** for at least 50 years. Landfill gas is majority methane which has a global warming potential 21 times that of carbon dioxide

THE HIDDEN PROBLEM

WHAT'S IN THE BINS?



Productivity Commission Inquiry identified toxic and hazardous materials in MSW included:

Lead acid batteries

Mobile phones, televisions and computers that contain **heavy metals**

Pesticide, paint and household chemicals

Gas cylinders

Clinical waste from health services

Asbestos



The Hidden Problem

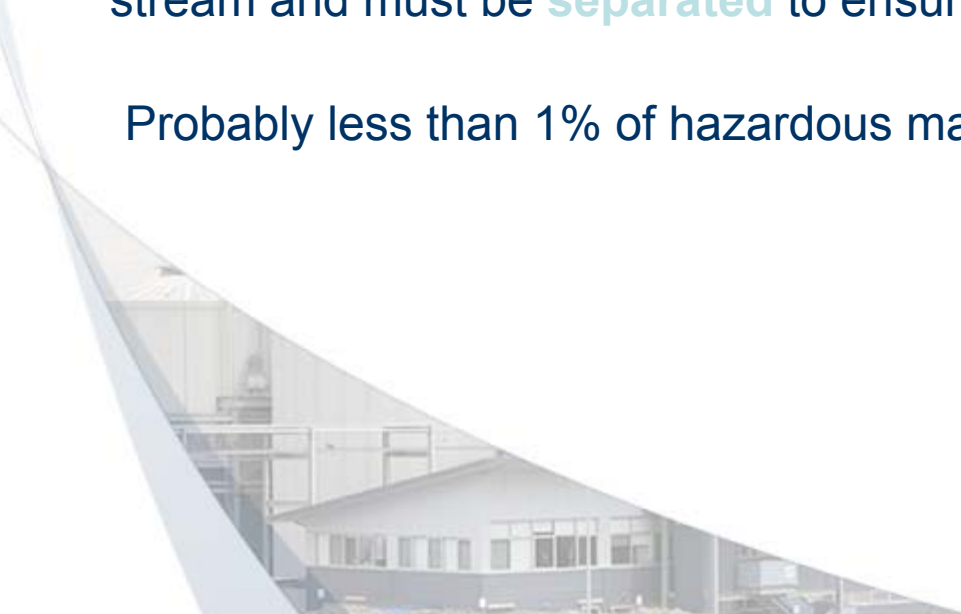
Where Are These Materials Going?



These toxic and dangerous materials are ending up in landfill sites across Australia

It is clear that hazardous materials are **consistently** present in the waste stream and must be **separated** to ensure product quality

Probably less than 1% of hazardous materials are **recycled**



ADVANCED WASTE TREATMENT

THE UR-3R PROCESS®



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Mechanical Biological Treatment that diverts over **70 per cent** of MSW from landfill. Operating at Sydney's Eastern Creek, treats 12 % of the city's MSW

Generates **bio-gas** to create enough green energy to power a UR-3R plant, with excess sold into local grid

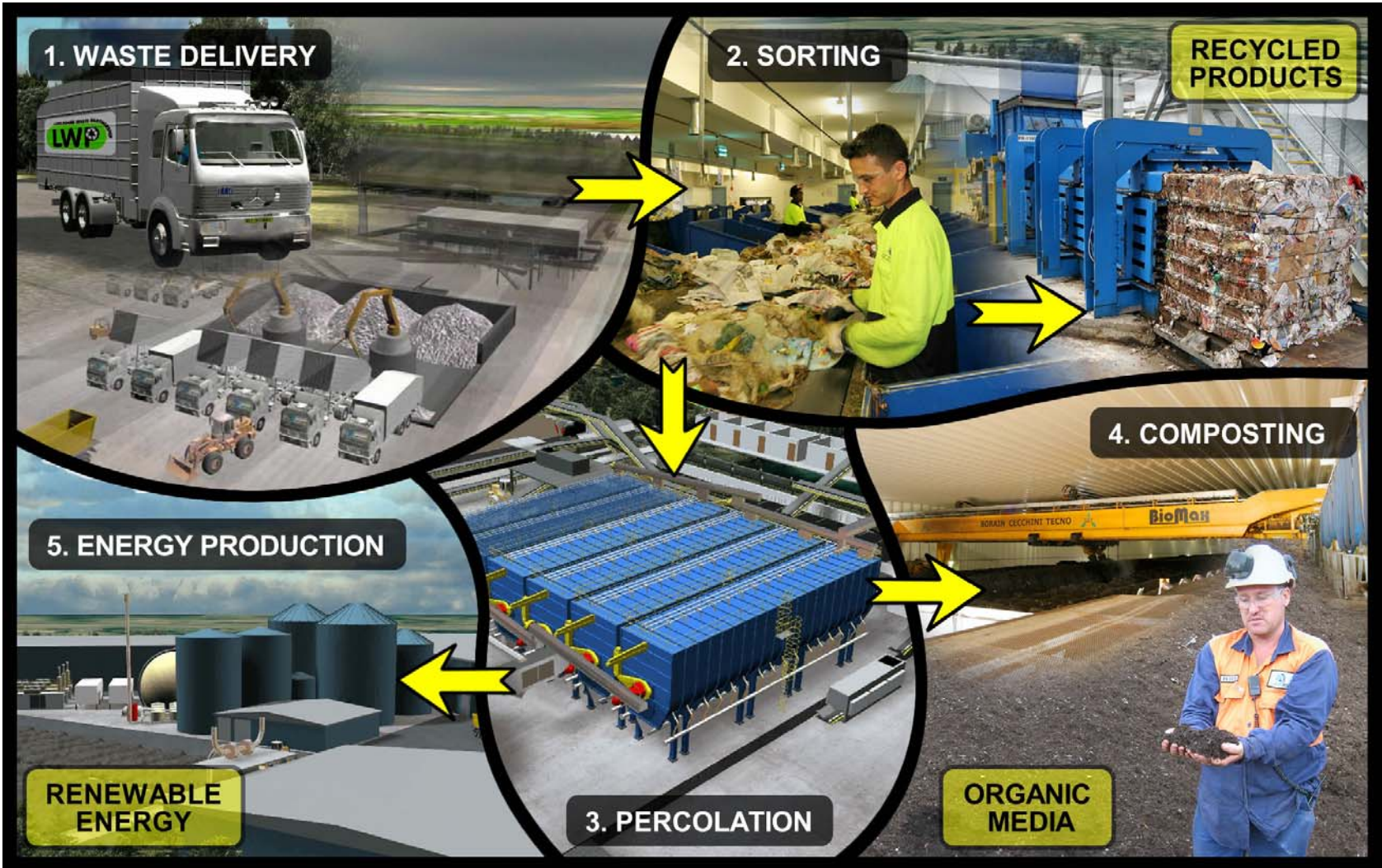
Recovers enough water from the waste stream to be **water self-sufficient**

Reduces the need to use **virgin materials** to replace those dumped in landfill Huge savings in embodied energy

Reduces **greenhouse gas emissions** by around a tonne for every tonne of waste diverted from landfill

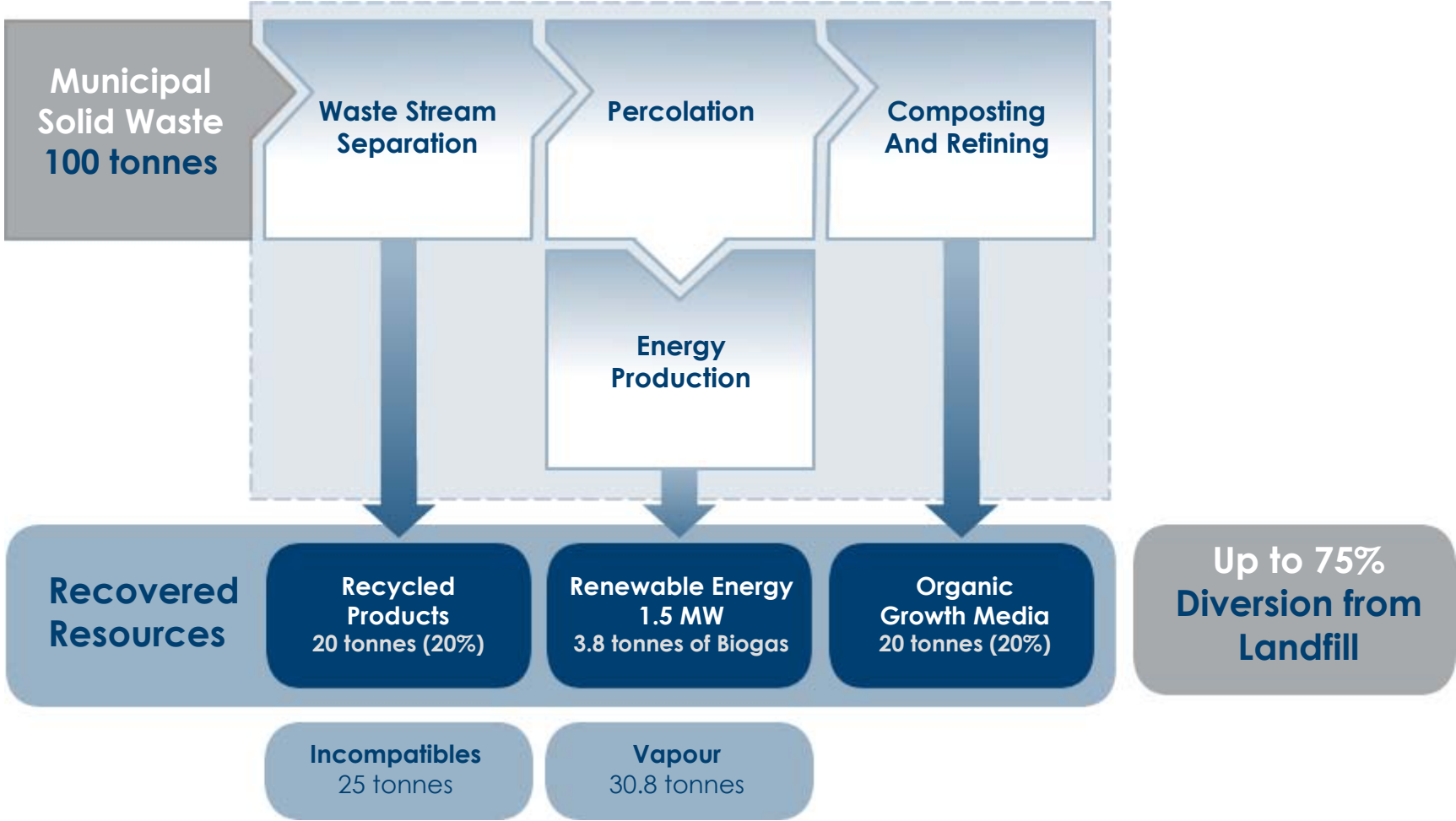
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THE UR-3R PROCESS[®]



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THE UR-3R PROCESS[®]



LEAD ACID BATTERIES

AN EASTERN CREEK CASE STUDY



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Classified as **hazardous waste** under Federal law.
Contain lead, lead compounds and sulphuric acid

Average 80 lead acid batteries enter Eastern Creek
each day. **15,000 annually**

Up to **150,000** used automotive batteries are disposed of
through Sydney's household garbage collection services each
year

These batteries are being **dumped** in landfill sites that are not
designed to take hazardous waste

HAZARDOUS WASTE

WHAT IS BEING DONE?



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Australian governments are **struggling** to find appropriate locations to store hazardous or toxic waste

Victorian Government spent six years and \$14m considering four short listed sites. Plans abandoned due to intense **community opposition**

Will continue to dump hazardous waste into two suburban landfills until 2020 and will increase levy on toxic rubbish from \$26 to \$250

With a lack of designated sites and a massive increase in cost **unethical operators** likely to dump toxic materials in council kerbside collections

HAZARDOUS WASTE

WHAT CAN BE DONE?



All MSW should be **pre-sorted** before landfilling to extract toxic materials

Not only act as **gatekeeper** but bring significant benefits including:

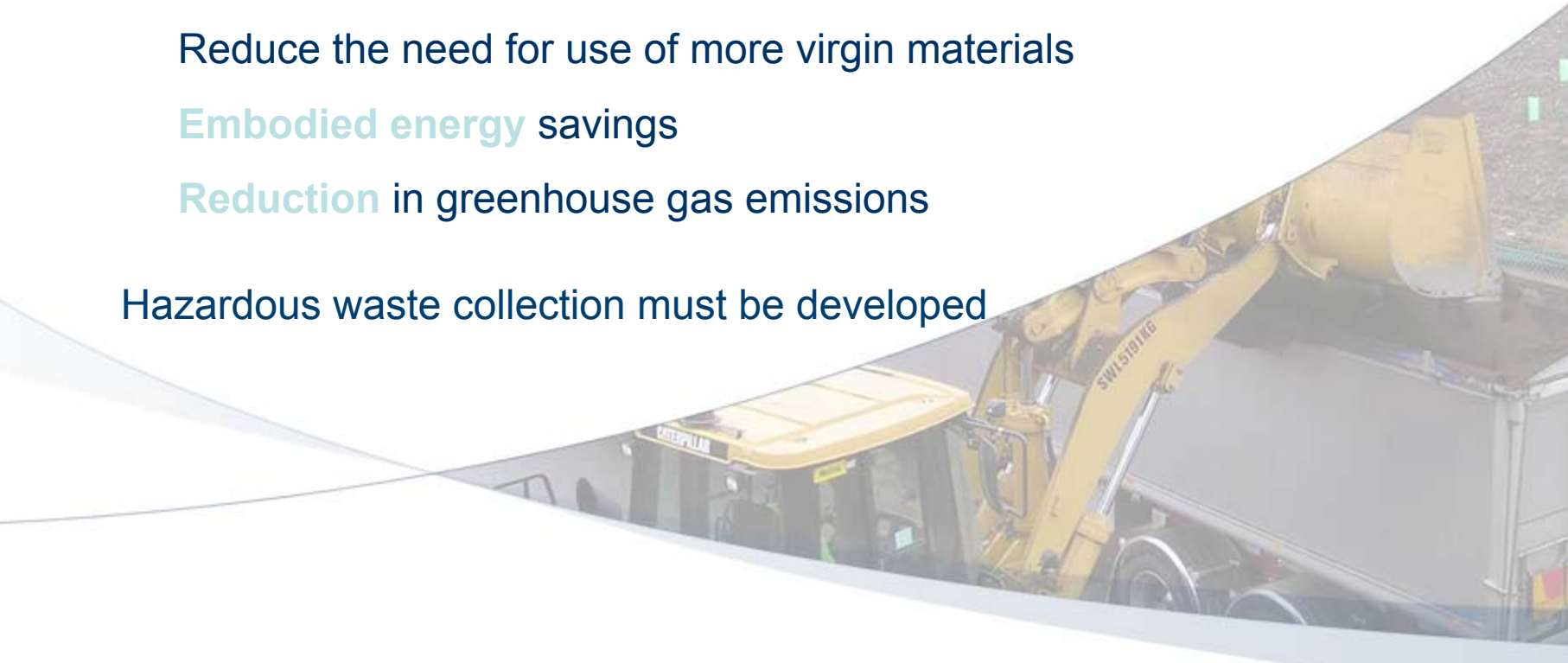
Increase in recycling rates

Reduce the need for use of more virgin materials

Embodied energy savings

Reduction in greenhouse gas emissions

Hazardous waste collection must be developed



ADVANCED WASTE TREATMENT

THE SUSTAINABLE OPTION



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It is **cheaper** to dump a tonne of MSW in landfill than process it at an Advanced Waste Treatment facility

There is no uniformity in landfill charges. State Governments espouse “**zero waste**” but the majority have levies that range between \$3 and \$6 per tonne

Australian governments need to show **leadership**

THE LANDFILL LEGACY

THE TRUE COST



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The price of landfilling does not take into account the **full cost** of the practice to our society

An **appropriate landfill levy is required** to ensure that landfilling is not cheaper than AWT processing

The cost of landfilling should be at least \$120 per tonne . The levy should increase by \$80 per tonne (2007 dollars) in 2012, and by a further \$80 per tonne (2007 dollars) in 2012



LANDFILL AVOIDANCE

AN AUSTRALIAN LANDFILL DIRECTIVE



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Dumping urban waste into landfill should be **progressively banned** in Australia, as it has been banned in Europe

Transitional **targets should be set** (i.e. First step down 2010) to achieve an ultimate goal of zero waste to landfill

Provide an **incentive scheme** such as a model based on the UK's Landfill Allowance Trading Scheme (LATS)

This facilitates the achievement of **waste diversion** targets through a cap and trade system for local government

Efficient councils can trade their excess credits, those who do not meet targets can trade credits or face a substantial penalty



RESOURCE RECOVERY

CLOSING THE LOOP



AWT provides **technology based** solution

Supported by **education campaign** reinforcing that domestic waste collection is not the place for hazardous materials

Provide specific household hazardous waste collections

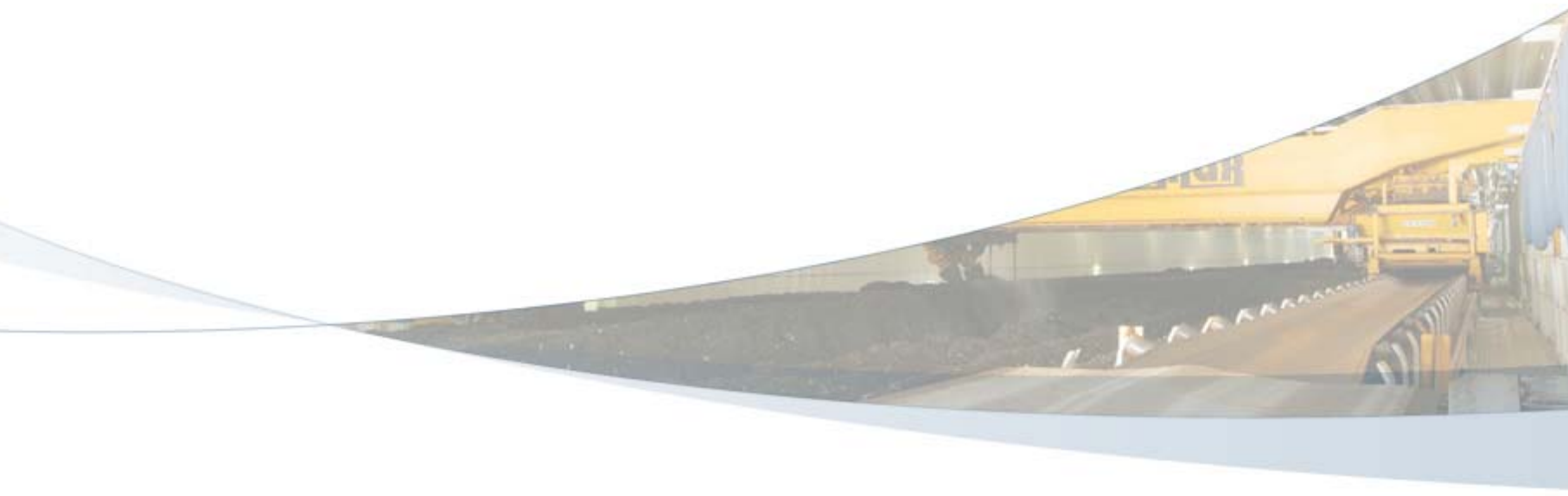
Establish drop-off locations and **retail take-back** schemes





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The landfilling of hazardous materials from Australian solid waste is literally a hidden problem – how long can we afford to ignore it?



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