

THE OUTLOOK FOR END-OF-LIFE VEHICLES IN AUSTRALIA



2024



We acknowledge the Traditional Custodians of Country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past and present

INTRODUCTION

In late 2021, the Federal Chamber of Automotive Industries (FCAI) and Motor Trades Association of Australia (MTAA) applied for and received a \$1 million grant from the Australian Government's Product Stewardship Innovation Fund to undertake extensive research and consultation towards the design of a national product stewardship scheme for end-of-life motor vehicles.

This report represents a summary of the completed research and design work.

The FCAI and MTAA wishes to thank their advisers and the many industry and government stakeholders who have provided key insights and valuable counsel to the project.

Special thanks go to the steering group that oversaw the work, namely Tony Weber (FCAI), Geoff Gwilym (MTAA), Richard Dudley (MTAA, till Dec 2022), Richard Delplace (FCAI), Rob Langridge (FCAI, till Jan 2023), Michael McKenna (VACC), Russell Scoular (FCAI), John Gertsakis (Product Stewardship Centre of Excellence), Claude Harran (Stellantis), Bill Thomas (Hyundai), Paul Pottinger (Volkswagen), Andrew Willis and Paul Hunt (Toyota), Dale Imlach (Imlachs), Michael Franke and Sherry Wood (Spare Parts Network), Mark Kraulis and Chris Goode (U-Pull-It Auto Recycling), and Mike and Robert Third (It Matters To You Car Recycling).

Disclaimer

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EXECUTIVE SUMMARY

PREFACE

Australia has an extensive motor vehicle dismantling and recycling industry. The industry is based on many small to medium businesses and is largely built around the economic recovery of useable parts and recyclable metals from end-of-life motor vehicles. However, thousands of tonnes of largely non-metal materials are also sent to landfill annually. This is because of a lack of technically feasible and economically viable processing options being readily available to dismantlers and recyclers.

This comprehensive **end-of-life motor vehicle study** by the Federal Chamber of Automotive (FCAI) and Motor Trades Association of Australia (MTAA) represents one of the largest motor vehicle studies of its type undertaken in Australia. It has identified options for a potential product stewardship scheme to boost end-of-life vehicle material recovery rates, avoid inter-state leakage of end-of-life vehicles and importantly, reduce vehicle waste destined for landfill. The FCAI and MTAA propose to build on the work completed to date and collaborate with all levels of government and industry stakeholders to make stewardship for end-of-life motor vehicles a reality.

Approximately five per cent of motor vehicles in Australia reach their end-of-life each year. This represents 850,000 individual vehicles and consists of vehicles written-off in accidents and vehicles that have reached the end of their operating lives. This accounts for approximately 1.36 million tonnes of waste. The industry currently recovers some 70 per cent of this waste with the balance destined primarily to landfill.



THE STUDY

The study found Australia can grow its recovery rates and reduce waste to landfill but faces unique and complex challenges. These challenges include identifying ways to address Australia's diverse population and vehicle fleet, fragmented recycling and dismantling industry, lack of viable recycling capability for high volumes of non-metal materials, and the lack of a domestic vehicle manufacturing industry to directly support reuse of materials.

The end-of-life vehicle study was supported by subject-matter experts who were able to provide in-depth advice to the FCAI and MTAA on a range of key topics including the current end-of-life vehicle landscape in Australia, the industry's capacity, capability and technology levels, the shape and structure of global end-of-life vehicle schemes and the existing policy and regulatory environment.

The work was additionally informed by an extensive literature review and broad stakeholder engagement. The engagement involved more than 30 site visits and meetings with stakeholders and two workshops in Sydney and Melbourne where more than 70 stakeholders from government, trade associations and industry engaged in discussion related to the disposal of end-of-life vehicles, product stewardship schemes and the potential for reducing waste streams to landfill.

THE LEARNINGS

Australia's recycling and dismantling industry was found to be lagging behind leading global economies and lacking in a nationally consistent approach, to end-of-life recovery, for a wide range of materials. While other economies are performing better in recycling end-of-life motor vehicles, no global scheme was found to be suitable for adoption in Australia without significant modification.

The study has shown there is significant opportunity to grow the end-of-life vehicle recycling industry via an industry/government co-regulatory product stewardship scheme.

The scheme would reduce waste leakage risks via the adoption of a nationally consistent approach encompassing all states and territories and significantly reduce waste streams to landfill by identifying ways to economically recover a wider range of vehicle materials.

The FCAI and MTAA determined that some key elements of off-shore end-of-life vehicle schemes such as Authorised Collection Facilities (ACF) and Authorised Treatment Facilities (ATF) with standardised operating and environmental features and Certificates of Destruction (CoD) to support higher standards of vehicle tracking would be needed to guarantee the success of any initiative in Australia.

In working for an appropriate design for a national product stewardship scheme the two associations and their advisers focused on potential design principles that would maximise positive environmental impact, leverage best practice from existing schemes, integrate with existing industry frameworks and provide transparency and equitable access.

A co-regulatory scheme, covering passenger cars including SUVs and light commercial vehicles of all fuel types and up to 3.5 tonnes, was recommended as it would best deliver on these principles. These vehicles represent the majority of the national vehicle fleet. Co-regulation would allow the industry to develop a nationally consistent scheme which marries the best of global end-of-life vehicle schemes with the unique challenges of the Australian environment before giving future consideration to how best accommodate other vehicles types such as motorcycles, heavy trucks and buses.

NEXT STEPS

While the study, based on more than 1000 pages of work, has provided many important answers, it also showed additional work through a partnership of industry and governments will be needed to further the development of a stewardship scheme.

Key issues requiring further exploration and consensus include the adoption of nationally consistent operating standards for the vehicle recycling industry; the ability to support target setting and higher material recovery levels including the accurate tracking of vehicles from cradle to grave; the establishment of a well-structured and high-performing product stewardship organisation to support a co-regulatory scheme and to facilitate the economic recovery of materials such as plastics, glass, rubber and textiles.

This additional work is expected to include a reconnaissance element to seek a comprehensive understanding of possible future opportunities – locally and overseas – for recycling non-metal materials. It will also focus on an options analysis to understand how Certificates of Destruction could be delivered through existing industry and government

systems, gap and options analysis to determine what dismantling and material information can be provided by Original Equipment Manufacturers (OEMs) - or vehicle manufacturers - to dismantlers and a further review of the funding models used by global end-of-life schemes.

The recognition of the scale and complexity of a motor vehicle product stewardship scheme, which adopts a whole-of-vehicle approach, highlights the greater need for this additional work compared to other similar schemes currently existing in Australia. The additional work will also pursue the delivery of a multi-pronged set of solutions such as the early inclusion of all vehicle powertrain technologies and new materials, a broader recovery of parts, improved separation of materials and better redirection of materials away from landfill.

The associations look forward to partnering with governments and stakeholders to complete this important work which will underpin the design and implementation of an economically sustainable co-regulatory product stewardship scheme that facilitates the further development of the automotive recycling/dismantling industry in a nationally consistent way by successfully broadening its material focus and by lifting its operating standards.



A nationally consistent scheme is critical to success

CHAPTER 1

THE NEED FOR ACTION

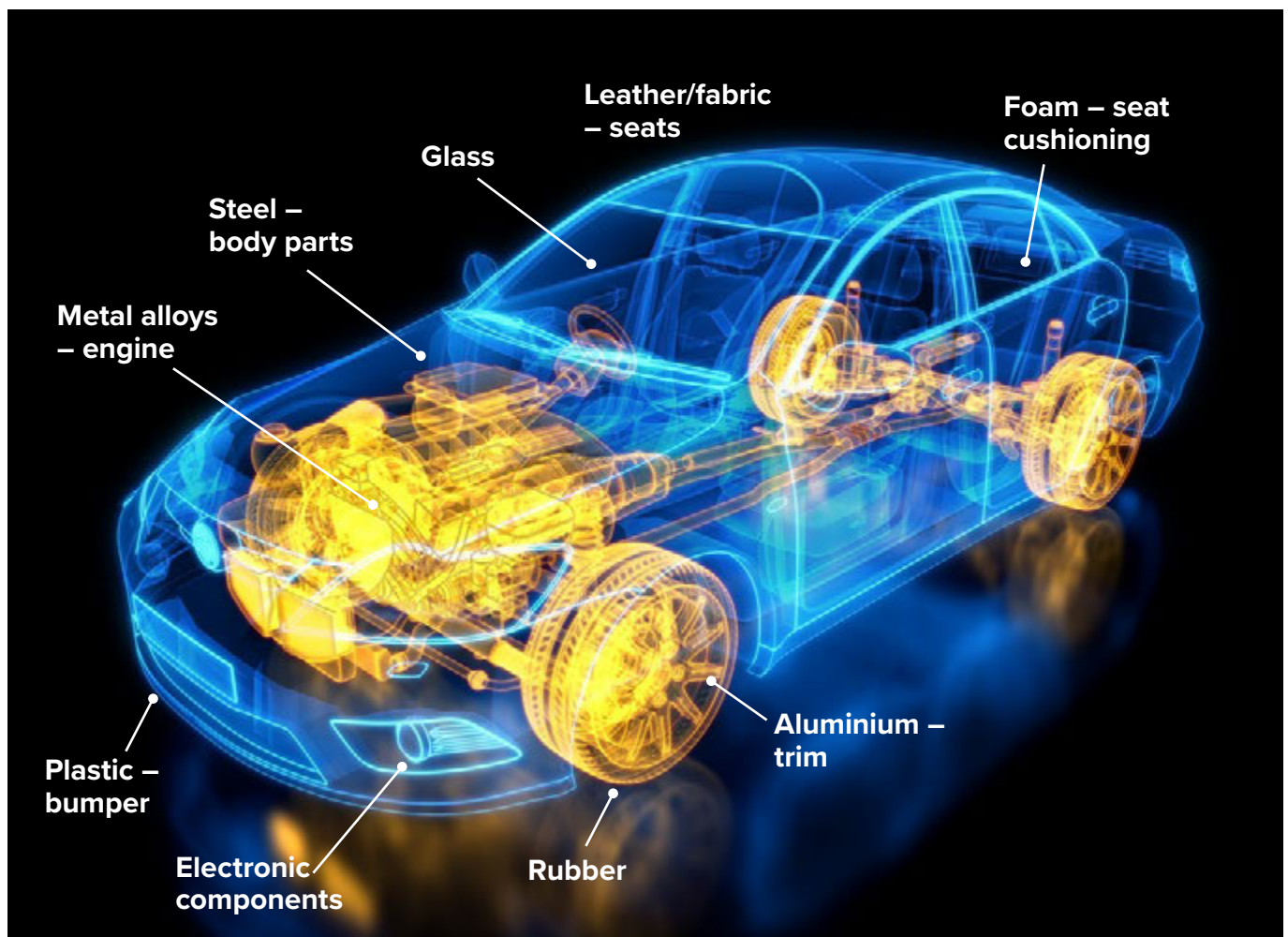
A COMPLEX INDUSTRY

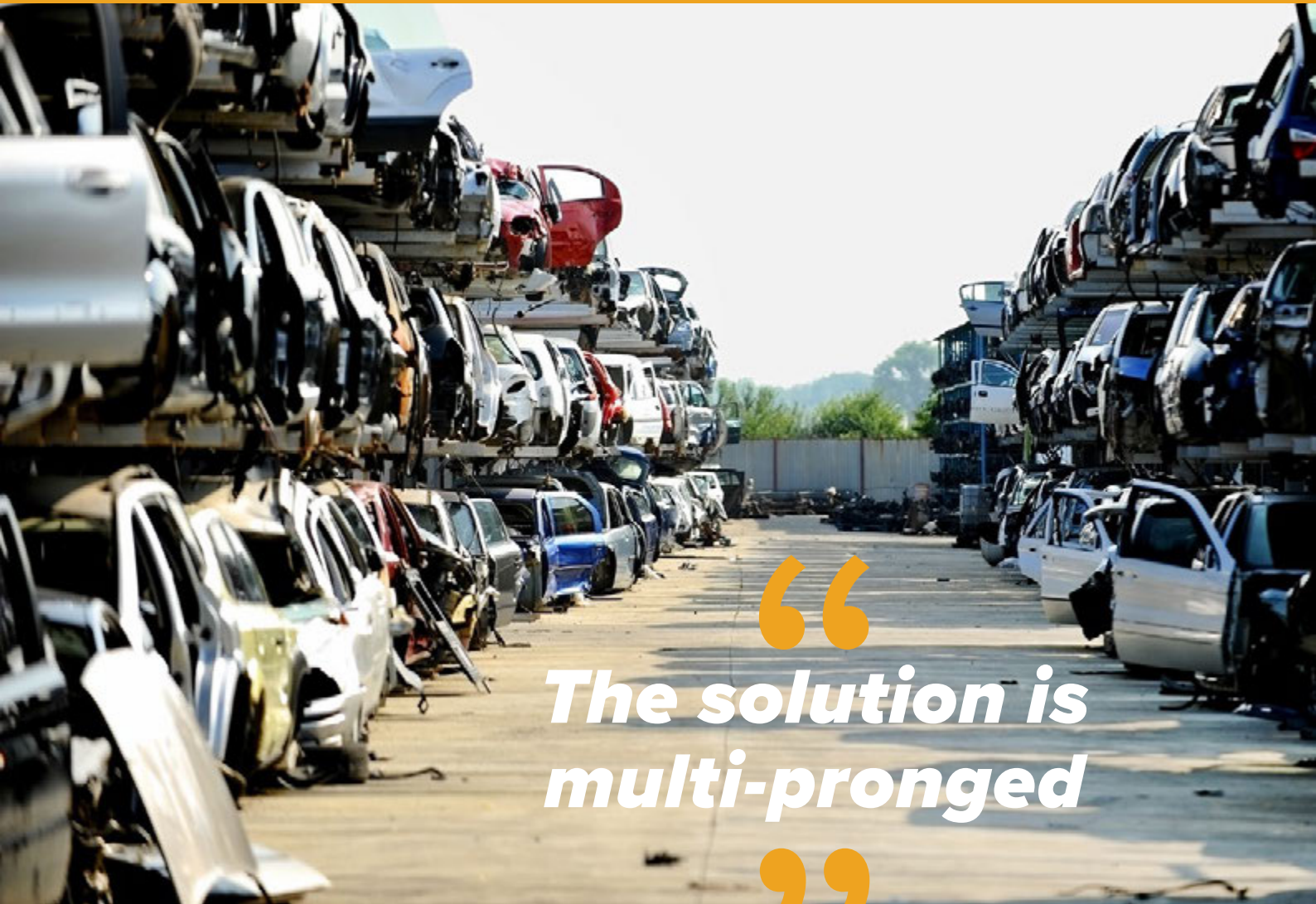
Buying a motor vehicle is among the first major purchases people make, and for many it brings a sense of true ownership. In the same way that Australians take pride in the operation, maintenance and care of these vehicles, so too does the broader industry. There are about 20.7 million vehicles with an average age of nearly 11 years on our roads today. As the number of vehicles on the road continues to grow, the number of vehicles reaching end-of-life and their waste streams will also continue to grow from the current 850,000 vehicles reaching their end-of-life each year.

Motor vehicle waste is a difficult problem, as motor vehicles are extremely complex assets made of several different materials – aluminium, steel, rubber, glass, plastic, rare metals, and textiles to name a few. Vehicles must be dismantled, materials separated and reuse and recycling markets identified.

The existing motor vehicle recycling/dismantling industry in Australia is mature and metals focussed. Currently 1465 recyclers/dismantlers are active in Australia. They are largely small businesses that cannot readily make rapid or significant changes to their structures and operating patterns.

Further complicating the situation is the characteristics of the Australian auto industry. A lack of manufacturing makes it particularly difficult to enforce physical and design elements of Extended Producer Responsibility (EPR). Exporting used materials from Australia poses unique challenges due to its considerable distance from key overseas markets, which can result in higher transportation costs and logistical complexities. Meanwhile, Australia as one of the least densely populated nations on earth makes achieving total recoverability extremely difficult.





“
**The solution is
 multi-pronged**
 ”

WHAT ARE THE BENEFITS OF PRODUCT STEWARDSHIP?

A future End-of-Life Vehicle (ELV) Product Stewardship Scheme will bring the industry’s numerous stakeholders together to collaboratively create a sustainable ELV recycling and re-use system.

The proposed scheme presents benefits and opportunities for individual businesses, for the broader auto industry, the economy and for the environment.

Environmental benefits

An ELV product stewardship scheme will prevent and reduce the waste associated with the dismantling of ELV vehicles, particularly for those materials that don’t already have a product stewardship scheme or a clear re-use pathway.

Through better regulation of hazardous materials within ELV dismantling, there will also be a reduction in these materials reaching our waterways, landfill, and other environments.

Social benefits

Product stewardship will improve the environmental, social and governance (ESG) performance of the automotive industry, building its reputation and trust amongst its current and future employees and the general public.

Economic benefits

Significant work is still to be undertaken to identify the best way of reducing waste streams to landfill, economically processing and/or disposing of non-metals materials from vehicles as well as finalising a business case, funding arrangements, and investment needs. However, it is expected that the benefits will include job creation and upskilling of dismantling and recycling businesses, an enhanced social license to operate, potential new markets for recovered materials, and less reliance on landfill.

THE JOURNEY SO FAR

In late 2021, the FCAI and MTAA were awarded a Commonwealth Grant under the National Product Stewardship Investment Fund to undertake work towards creating an end-of-life vehicle stewardship scheme.

The grant objectives were to:

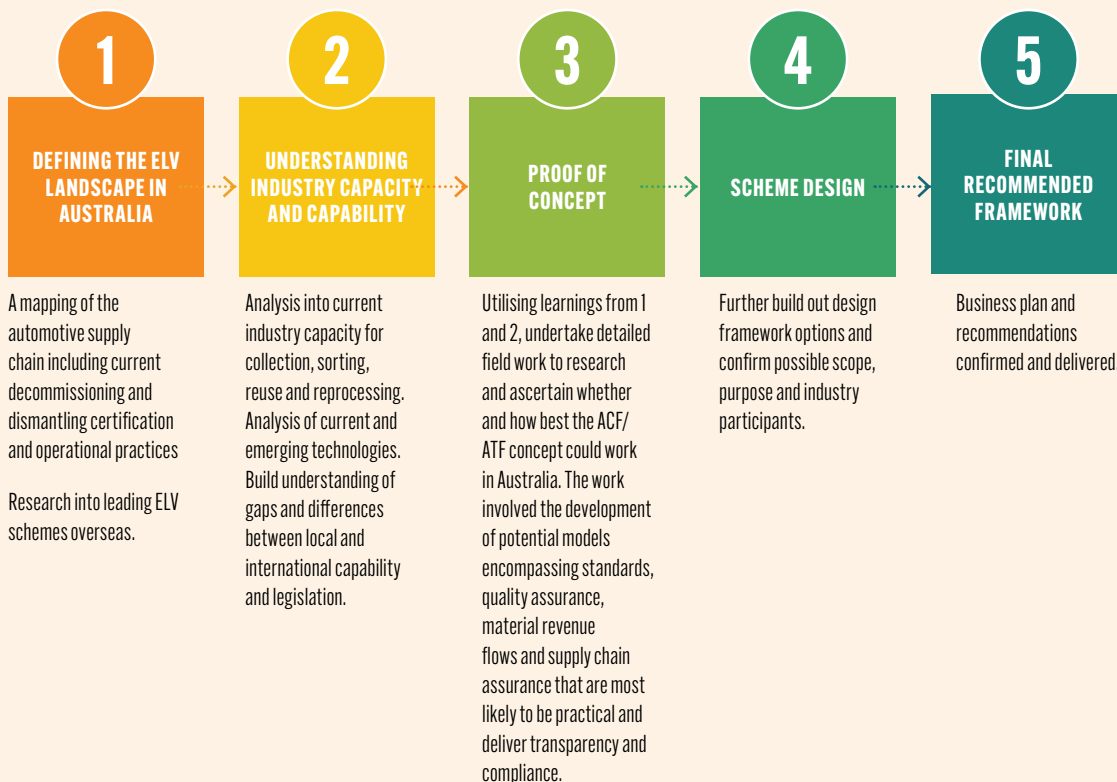
- **Accelerate work that addresses end-of-life vehicle waste through an implementation pathway for industry and producer-led product stewardship for end-of-life vehicles, which incorporates circular economy principles;**
- **Support a significant increase in the rate of resource recovery from end-of-life vehicles, and;**
- **Understand, quantify and articulate the end-of-life waste streams in Australia.**



Tony Weber, the Chief Executive Officer of FCAI, speaking at a stakeholder engagement workshop.

Completed projects

The FCAI and MTAA undertook and completed five discrete phases of work.



THIS FOUNDATIONAL WORK PROVIDES A STRONG STARTING POINT FOR GOVERNMENTS AND STAKEHOLDERS TO WORK TOGETHER TO PUT THE BUILDING BLOCKS OF AN ELV STEWARDSHIP SCHEME IN PLACE.

BUILDING A PLATFORM FOR SUCCESS – WHAT WE’VE LEARNT SO FAR

The work undertaken to date has provided several important insights:

- 1. A nationally consistent scheme** is critical to success. The complexity of the industry, combined with the complexity of differing legislation in states and territories means we need a national approach.
- 2. Trailblazing in other countries has provided Australia with a platform for success.** The project team looked at the EU, the Netherlands, Ireland, Germany, UK, Japan and South Korea to understand how they have designed, funded and operated their schemes. This work has provided invaluable guidance towards the design of an Australian scheme.
- 3. Co-regulatory is key.** Unlike many other stewardship schemes, an ELV stewardship scheme cannot work as a purely voluntary scheme. Overall success in automotive waste management requires close coordination between several industries and levels of government. Some level of regulation is required.
- 4. The solution is multi-pronged.** The solution is complex, will take time, but will be worth it. There are a multitude of ‘levers’ that must be acknowledged and moved to progress the stewardship scheme.

Issues identified include an ability to track all vehicles from cradle to grave, building capacity at the pre-shedding stage e.g. how vehicles are dismantled and how materials are sorted and triaged; at the post-shredding stage e.g. how individual material is then further refined to reduce Automotive Shredder Residue (ASR); and finally in the management of the ASR.

Each of these issues will require consideration of legislation, education and training and a business case in order to build cohesive recycling models that allocate investment most effectively.

- 5. The identification of feasible and affordable new and emerging technologies.** Technology will be key, particularly in the processing of non-metals materials such as plastics, foam, rubber and glass.
- 6. Setting realistic targets.** Establishing targets to scale the program overtime to service metropolitan, regional, and rural locations.

AN OPPORTUNITY TO LEARN FROM GLOBAL SCHEMES

Despite the challenges we face Australia has a unique opportunity to learn from global end-of-vehicle life schemes while building a scheme that is fit for purpose for the Australian geographic, economic and regulatory landscape.

Our analysis of existing global schemes demonstrated a key linkage between appropriate regulatory intervention and higher levels of end-of-life vehicle recovery.

The research told us that there is no one-size-fits all approach to ELV product stewardship.

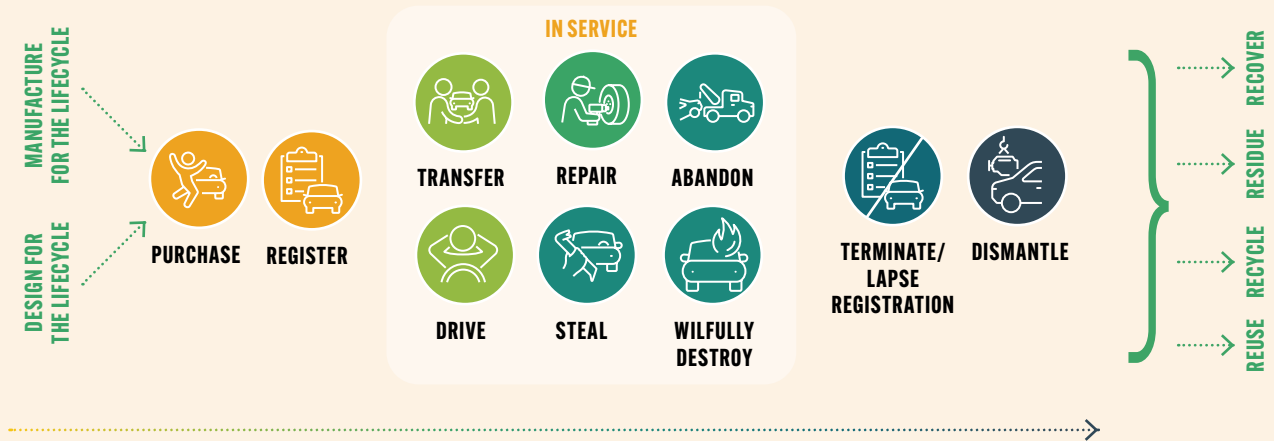
For example, while most jurisdictions did have Extended Producer Responsibility (EPR), it is implemented differently in each jurisdiction based on local context – in markets like Japan which have strong manufacturing industries, the manufacturers have more direct responsibility in the collection and treatment of ELVs.

Similarly, each jurisdiction had a completely different approach to the sharing of ELV management resulting in varying levels of enforcement.

One clear commonality was that the achievement of high standards, consumer accessibility and strong environmental performance typically aligned with the use of Authorised Treatment Facilities (ATF).



The Life Phases of a Vehicle



Research focused on the markets which have the highest standards, most of which come from the EU and Japan. In the EU, this is largely driven by two EU Directives – later brought together under one directive – which require that:

- at least 95% reuse and recovery by average weight per vehicle and at least 85% reuse and recycling by average weight per vehicle;
- vehicles must be constructed so that 85% by mass is reusable and/or recyclable and 95% by mass is reusable and/or recoverable

Japan's track record in managing ELVs is driven by the economy-wide desire to reduce waste and manage resources in a country that is heavily reliant on imported raw materials. Our work showed the importance of a scheme design that avoided unnecessary leakage. The ability to capture high levels of vehicles for recycling would be dependent on an ability to track vehicles from their initial sale and first registration to their final destruction. Registration systems only succeed if a Certificate of Destruction is required to remove a vehicle from the register, as is the case in the UK, Japan, and Ireland.

Ultimately, it was very clear that schemes' success depends on enforcement, both via an ATF structure to ensure that only authorised facilities are operating and of the environmental practices to ensure appropriate processing and disposal.

Key lessons from global review

1. Australian conditions are unique, and the application of overseas learnings must consider vehicle collection difficulties, the exploitation of jurisdictional differences within the country and a recognition that design requirements are hard to enforce when vehicles are imported rather than manufactured locally.
2. This work strongly suggested a consistent national approach will be most important if a product stewardship scheme is to succeed in a market of the modest size and broad geographical diversity of Australia.
3. Different initiatives led by individual stakeholders and their representatives have typically been widely supported but have not, to date, taken a complete, whole-of-life perspective.
4. Regulating for the overall lifecycle is critical. Schemes will be limited in their success unless regulations cover every necessary element of design, owner responsibility for disposal, regulated treatment and materials processing. The ability to accurately track vehicles through the life cycle is critical for target setting and reporting.
5. Australia must be clear about its ELV policy goal. No overseas jurisdiction has a zero footprint goal, and schemes do not prioritise between alternative undesirable, but tolerated, outcomes.

POLICY AND REGULATORY ENVIRONMENT

The Australian automotive industry operates in a complex compliance, licensing and regulatory environment with product technical certification and registration requirements in addition to corporately focussed administrative, environmental and hazardous material regulations.

An analysis of state and territory legislation and regulations showed there are differences in the required treatment of the motor vehicle dismantling/recycling industry including the trading of vehicles and components and the handling of specific components such as batteries.

Industry guidelines for vehicle dismantling and recycling were prepared in 2021 by the Victorian EPA and the VACC. They are regarded within industry as representing a sound basis on which to build a nationally consistent approach.

A National Waste Policy underpins waste and resource recovery. It incorporates five key principles – avoidance of waste, improved resource recovery, increased use of recycled material, better management of material flows and improved information flows – and outlines responsibilities for businesses, governments, communities and individuals.

The 2019 Australian Government Waste Action Plan sets ambitious targets. It seeks to reduce waste exports, reduce waste generated by 10 per cent per person by 2030, recover 80 per cent of all waste by 2030, significantly increase the use of recycled content by government and industry, cut waste to landfill and provide better data to support decision-making.

The delivery of these targets will be significantly influenced by product stewardship schemes. Product stewardship acknowledges that the design, use and disposal of products should be managed in a way that reduces their environmental lifecycle impacts.

The Recycling and Waste Reduction Act 2020 provides a legislative framework for product stewardship schemes and provides for voluntary, co-regulatory and mandatory schemes. Voluntary schemes can be accredited by government, co-regulatory schemes involve industry-led initiatives supported by government regulation and mandatory schemes involve industry taking actions established and administered by government.

Products currently covered by product stewardship schemes include tyres and small batteries (voluntary), televisions and computers (co-regulatory) and waste oil (mandatory).

The inclusion of products in stewardship schemes is guided by a Ministerial Priority List which is updated annually. Goods covered in the 2022-23 list include mattresses, electrical and electronic products, photovoltaic systems and tyres.

In addition, several industry product stewardship schemes have in recent years sought and obtained relevant competition policy authorisations from the Australian Competition and Consumer Commission to enable competing firms to work together to establish schemes and collect levies.

Vehicle Regulation Commonwealth, State and Local

JURISDICTION	IN SERVICE	TRANSITION TO ELV	DISMANTLING & PARTS	WASTE HANDLING
COMMONWEALTH	Road Vehicle Standards Act, Australian Consumer Law, Personal Property Securities Register			Waste stream export restrictions
STATE	Safety – Roadworthy Road use – Registration	Registration cancellation Written-off Vehicle Register Motor trading laws	Environmental processing regulations Consumer Laws (parts)	Waste handling regulations Landfill regulations
LOCAL			Site environmental requirements	

DECOMMISSIONING PROCESSES, INDUSTRY CAPACITY AND TECHNOLOGY

A crucial component of this study involved the mapping of end-of-life vehicle industry's approach to vehicle identification, decommissioning, certification and operational practices.

The approaches used by larger Australian automotive dismantlers and recycling businesses largely reflect the processes adopted in jurisdictions where they are defined and governed by laws and regulations.

Generally, following the pathways for a vehicle to be deregistered, there are four stages for total decommissioning and destruction as outlined below.



DE-REGISTRATION PATHWAYS

End of economic life; accident incident; stolen



DEPOLLUTION DECOMMISSIONING

Orderly and compliant process to remove fluids, batteries, potential explosive devices (airbags).



DISMANTLING RECYCLING

Removal of parts or storage of parts in businesses where consumers can seek their own parts.

Removal of precious metals, wiring harnesses, glass, separation of ferrous and non-ferrous metals etc



CAR BODY CRUSHED, SHREDDED, BAILED

After parts components removed for reuse or recycling the remaining vehicle is crushed and bailed.

Some recyclers may possess their own shredder or will send bailed metal to metal recyclers for shredding and reuse.

Ultimately, the research found that the current disposal of ELVs in Australia is unsatisfactory for the following reasons:

- There is little capability to track the pathways of ELVs once they are deregistered, opening the lifecycle to unscrupulous behaviour
- There is currently no incentive beyond an opportunity cost for an owner or recycler to reuse a part unless it has sufficient value.
- The value of recyclable material is volatile, meaning that businesses are unlikely to invest in recycle and reuse pathways for materials which may not be financially viable in the future – even if they are today.
- There is very little in the way of certification in Australia:
 - There are no certificates to confirm the final owner of a vehicle has destroyed it in accordance with regulations;
 - The final owner is often not the same as the final registered operator, further complicating matters;
 - No Authorised Treatment Facilities or industry standards, and;
 - No cradle to grave tracking.

Perhaps most challenging is that the dismantling/ recycling industry in Australia was built around metals recovery. At the global level, there has been a more concerted effort to recover a broader range of materials.

The need to reduce waste streams to landfill means there must be an increasing focus on the successful recovery and reuse of vehicle materials such as plastic, rubber, glass and textiles.

A more comprehensive understanding of new dismantling and material sorting technologies in Europe would be useful in determining a technically feasible and economic approach for Australia.

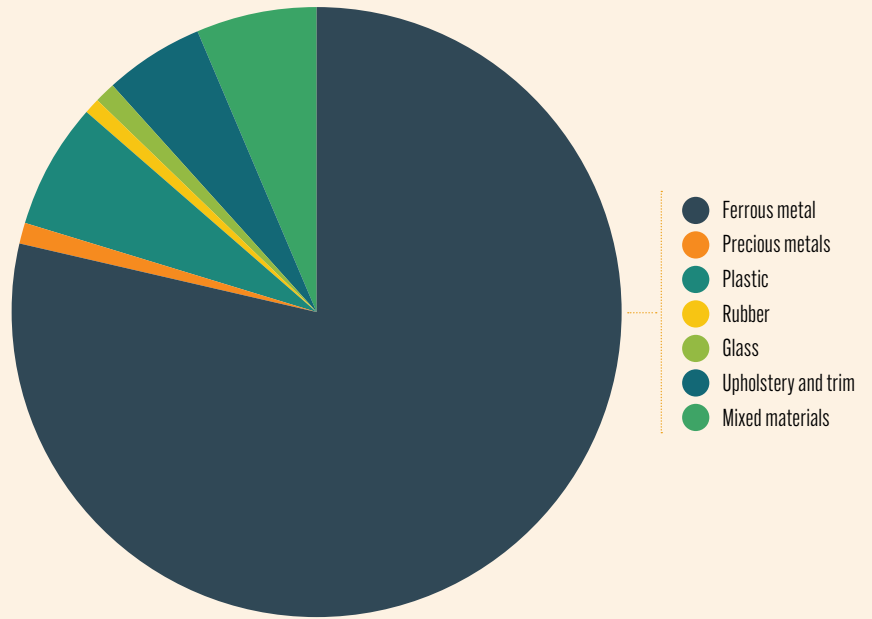
Materials in an ELV

ELVs are largely made of ferrous metal but also contain other materials that can be reused, recycled or recovered for energy.

Different vehicle models have different mixes of material, with trends toward more plastic. ELVs have different degrees of damage. This largely determines the mix of parts and waste available for reuse or recycling.

There are diminishing returns in separating wastes and no obvious cut-off point.

The economics of separation and salvage determine how much is currently stripped and separated.



A PROOF-OF-CONCEPT STUDY

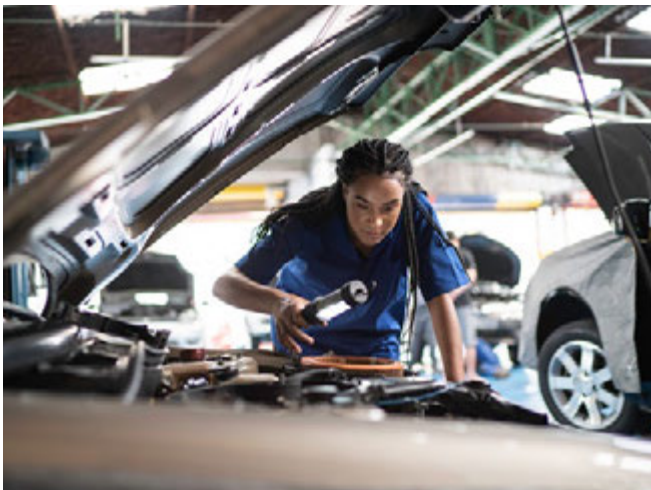
What is a proof-of-concept?

Ideally, the viability of an approach to a problem is best proven with a full-scale demonstration of the process in practice. Such a demonstration would need to provide the full cycle from acquisition to complete disassembly of the vehicle and delivery of separated wastes, covering a representative cross section of vehicles with demonstration sites covering each major location type (city, regional and rural).

To cover the Australian context, such a demonstration would require the establishment of several demonstration sites involving the installation of concreted, partially (at least) covered sites fitted with several major capital items, the engagement of competent and experienced staff for the duration of the demonstration and the acquisition of sufficient vehicles.

The establishment of a pilot ATF demonstration, while ideal, would take considerable time at a substantial cost, would have limited engagement with industry participants, and may not unearth elements of better practice solutions from industry.

A Proof-of-Concept (PoC) is a lower impact solution which tests the elements in existing establishments, identifying good practice where it exists and scoping and scaling the gap where it does not. A PoC delivers vital knowledge about transitioning from the present to the future which a full-scale demonstration may not.



PoC overview

This work involved detailed engagement with 12 recycling/dismantling firms with a diversity of business models and range of locations in metropolitan, regional and rural Australia.

Outcome

The research found that an ATF approach would be compatible with the current vehicle acquisition processes for dismantlers. The concept of an Authorised Treatment Facility that (except for fully sealed storage surfaces) complies with the Victorian Environmental Protection Agency guidelines is feasible.

A more complete dismantling of ELVs is possible with existing equipment and the skills of dismantlers, potentially achieving the 95% reuse, recycling and recovery targets set by the European Union.

There is a viable documentary approach to providing verifiable evidence of destruction through the ATF model subject to appropriate legislation being enacted.

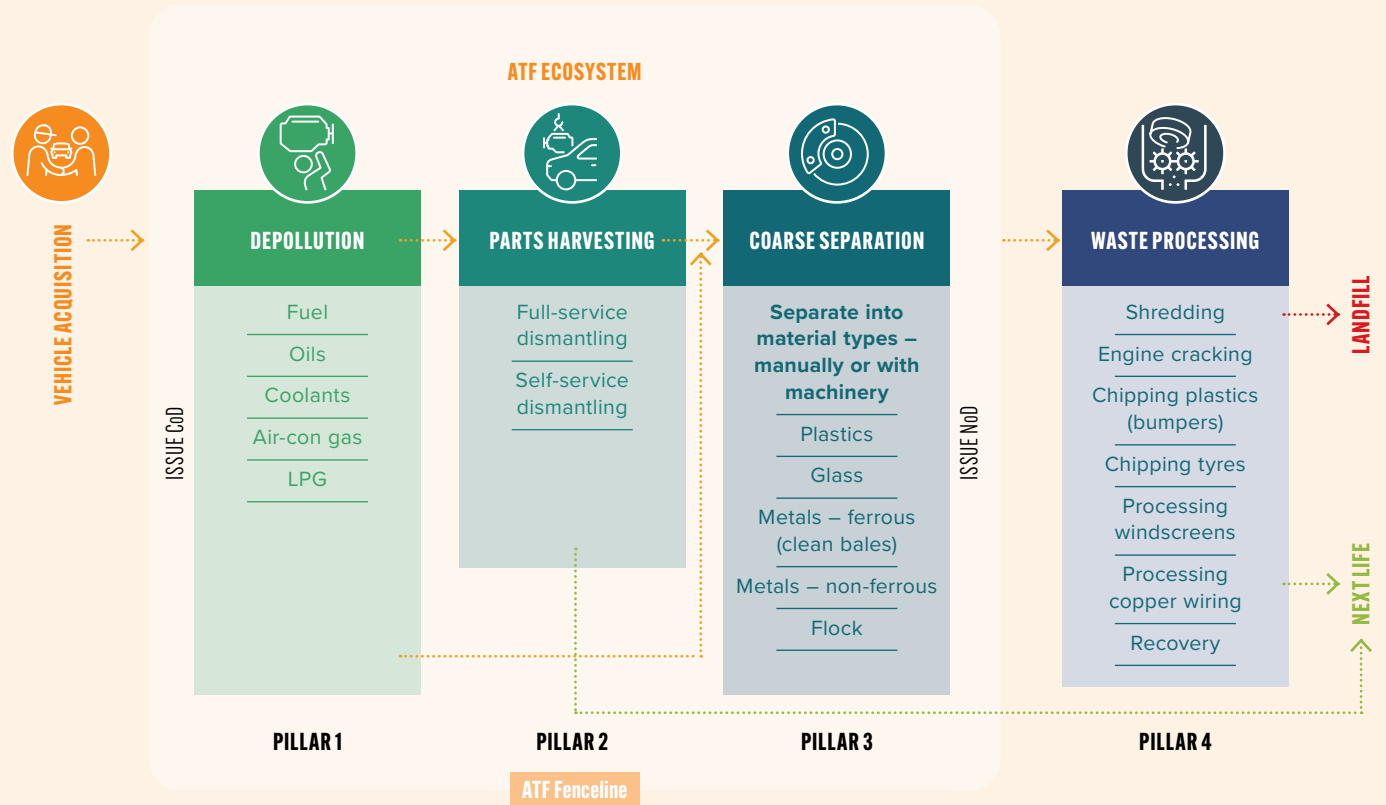
The concept of an ATF 'fenceline', within which ATF activities are controlled, is compatible with current industry models. Businesses may operate entirely or partly within the fenceline and businesses that will mostly be outside the fenceline will be able to receive separated materials in a form that is suitable for recycling or recovery.

Every existing dismantling business is unique in some respect or in the combination of elements that make up its business model, but all could have a viable and valid place in the ATF fenceline model.

As such, the researchers considered that the ATF concept was proven in the Australian context.

ATF Ecosystem

Detailed ATF Fenceline



BUILDING DESIGN PRINCIPLES

A three-step process was followed to ensure that recommendations for scheme design could be made based on a robust methodology.

1. A set of scheme design principles were developed which would articulate the objectives of the scheme and inform the development of scheme design options.
2. These principles were broken down into 20 equally weighted criteria to act as indicators/outcomes upon which scheme design options could be assessed.
3. These criteria were then further broken down into 31 quantitative measures which were used for objective scoring against each scheme design principle.



SCHEME DESIGN PRINCIPLES

FCAI and MTAA worked with their advisers to agree on a set of design principles.

The design principles are:

Positive environmental impact

A scheme that maximises positive environmental impact and circularity of materials across the end-of-life vehicle value chain.

Best practice

A scheme that leverages best practices from global end of life vehicle schemes with a realistic velocity of implementation that is tailored to Australia's unique landscape.

Integration with existing frameworks

A scheme that considers existing policy context, leverages existing industry structures/experience and integration with existing product stewardship schemes where feasible.

Transparent

A scheme that is transparent and equipped with appropriate levels of regulation and enforceability to ensure a nationally consistent and level playing field, whilst minimising excessive regulatory burden for stakeholders.

Equitable access

A scheme that is equitable, accessible and incentivises participation, whilst remaining economically sustainable to maximise the scheme's ability to deliver on its objectives and minimise the cost burden for all stakeholders.

SCHEME DESIGN RECOMMENDATION: LED BY INDUSTRY - SUPPORTED THROUGH REGULATION

REGULATORY FRAMEWORK

- ✓ Co-regulatory

SCOPE

- ✓ All ELV parts and materials collected
- ✓ Hazardous materials to be removed
- ✓ Circularity of some materials regulated

OPERATIONS

- ✓ Targets segmented by waste hierarchy
- ✓ Mandated coverage targets
- ✓ However, despite the numerous structural, geographical, legislative and economic obstacles, the industry is solidly preparing to advance on a product stewardship journey including Evidence of Destruction tracking
- ✓ Some export of materials allowed

FUNDING

- ✓ Payments to fund the operation of scheme
- ✓ New infrastructure costs shared by stakeholders

Regulatory framework

A successful ELV Scheme would be a government regulated and industry administered scheme operating as a co-regulatory scheme under the Recycling and Waste Reduction Act 2020 and other appropriate legislation.

A co-regulatory arrangement involves regulation that identifies and requires liable parties to be members of co-regulatory arrangements. Under a co-regulatory model, government develops regulations in consultation with industry, unlike a mandatory arrangement, where the government may legislate/enforce compliance and sanctions.

A co-regulatory approach is flexible enough to enable enforceability mechanisms. This, coupled with the collaborative opportunity between industry and government makes this arrangement favourable.

Scope

Inclusion of vehicles

All passenger cars including SUVs and light commercial vehicles up to 3.5 tonnes would be included in a scheme.

Materials collected

All ELV parts and materials will be considered within the scheme. This will include both materials which already have an existing reuse pathways and others which do not.

Approach to hazardous waste

It is recommended the scheme will pursue a best practice approach by seeking to harmonise existing regulations on how hazardous waste is disposed of.

Consistent standards for the removal and treatment of hazardous waste across all ELVs nationally will maximise the environmental outcomes of the scheme. Crucially it also provides consistency in ELV treatment across different states and territories, allowing for best practice to be adopted nationally.

Circularity

The recommendation for this scheme is to mandate the circularity of the highest value materials and materials which have the highest environmental impact. This option is preferred as it maximises circularity at an operationally and financially viable scale.

Operations

Development of Evidence of Destruction tracking process

In the EU, UK and Japan, which have mature stewardship schemes, there are robust reporting mechanisms in place to allow vehicles to be tracked from cradle to grave. In Australia there is currently no system to completely track the destruction of vehicles at end of life.

The recommendation is for this scheme to establish a centralised and national “Evidence/Certificate of Destruction” process. This will enhance decision making and continuous improvement of the scheme, enable better tracking of vehicles from cradle to grave and ensure vehicles are not discarded and dumped in an uncontrolled manner.



This system allows the scheme to prioritise the most environmentally impactful materials

Interaction with other Product Stewardship Schemes (PSS)

It is important to consider other stewardship schemes already operating in the automotive industry. This includes (but not limited to) Aluminum Stewardship Initiative, Product Stewardship for Oil Program, Tyre Product Stewardship Scheme, and Responsible Steel scheme.

It is recommended that the stewardship scheme for ELVs should consider potential coordination processes and integration with other PSSs where such coordination can increase efficiency and minimise complexity.

Segmentation of materials

It is recommended that this scheme partially segments target rates for select materials similar to the Japanese model which dictates that 95 per cent of average vehicle weight is recycled inclusive of:

- Deconstruction of fluorocarbons
- recycling targets for airbags
- recycling rates for automotive shredder residue (ASR) systems

This system allows the scheme to prioritise the most environmentally impactful materials, whilst ensuring that compliance is achievable.

It is also recommended that waste be segmented and measured according to waste hierarchy, potentially emulating schemes in the UK and EU which aim to 'reuse and recycle' at least 85 per cent average weight per vehicle.

A well-designed product stewardship scheme in Australia will facilitate the industry meeting higher levels of material recovery and allow it to move over time to the levels achieved in some major overseas markets.

The finalisation of any targets will be dependent on the conclusion of research work to determine the economic and technical feasibility of recycling non-metals materials.

New infrastructure requirements

It is recommended that additional work related to the feasibility of achieving greater recyclability of non-metals materials include where necessary consideration of any need for the provision of new infrastructure.

Funding arrangements

Who would pay and when?

Funding of the ELV scheme may take many forms including producer/importer/distributor levies, a consumer levy, government subsidy and any shared model that leverages multiple funding sources. Funding may also be sourced at one or several touchpoints during the lifecycle of the vehicle including at the point and time of sale of a new vehicle, during the operation of the vehicle in parallel to its registration and licencing, and / or at its disposal from the final owner to the ACF/ ATF.

In overseas schemes, funding models vary but are fundamentally market-based, relying on the vehicle having a positive net value (scrap value less processing cost), supplemented in some countries by manufacturer funding or buyer contributions. Ultimately, the costs end up being borne by the end consumers either directly or indirectly, as a flat cost irrespective of the vehicle type, size/weight or powertrain technology. Where some ELV scheme funding is sought from the sales of new vehicles, today's new vehicles fund the treatment of vehicles that were sold 10, 20 or more years ago.

Further work and stakeholder engagement is required to determine the appropriate funding model for an Australian scheme. Due consideration will need to be given to the potential impacts on consumers, decarbonisation (e.g. costs to producers and consumers to not hinder the current energy transition), and existing recycling performance (e.g. economy of the metals recycling already in place).

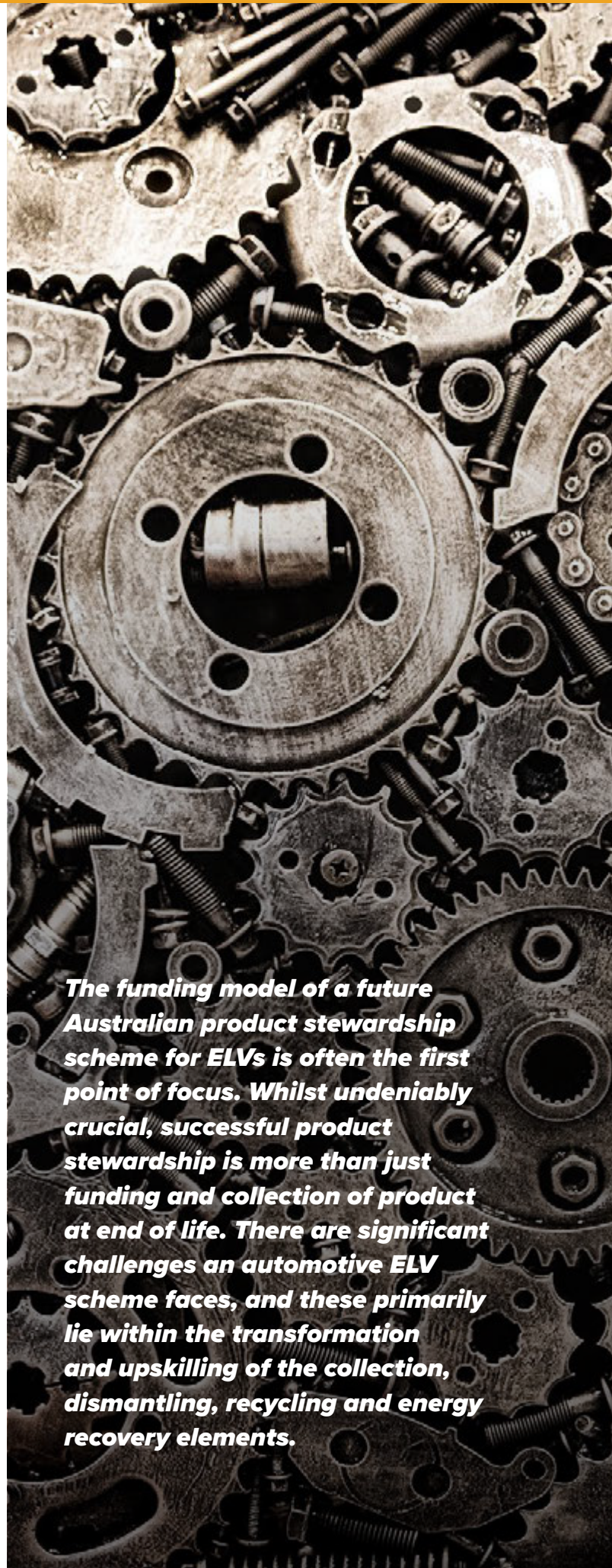
A progressive approach that leverages multiple sources of funding in close consideration of the investments needed to achieve targeted performance improvements may be the optimal model for an efficient scheme establishment in Australia. This approach will also need to ensure complete transparency so that all parties who are required to provide funding to the ELV scheme have full visibility of what they are paying.

What would the funds be used for?

The ELV Scheme will need to appropriately allocate the collected funds to incentivise the ecosystem to meet the objectives and obligations of the scheme.

Whilst a full plan for the funding of various activities still needs to be developed, the following activities would be prioritised:

- **Incentivisation for improvements** of ELV treatments at vehicle dismantling / pre-shredding stage, at shredding stage and at post-shredding stage (e.g. ASR separation, waste to energy conversion) and in material recycling with the aspiration to develop national or global circular operations where possible;
- **Research & Development** to identify and develop improved ELV treatments through processes, systems or new technologies;
- **Training and courses** to ensure practitioners across the value chain understand the scheme and their role in it;
- **Public awareness campaigns;**
- **Scheme administration and operations.**

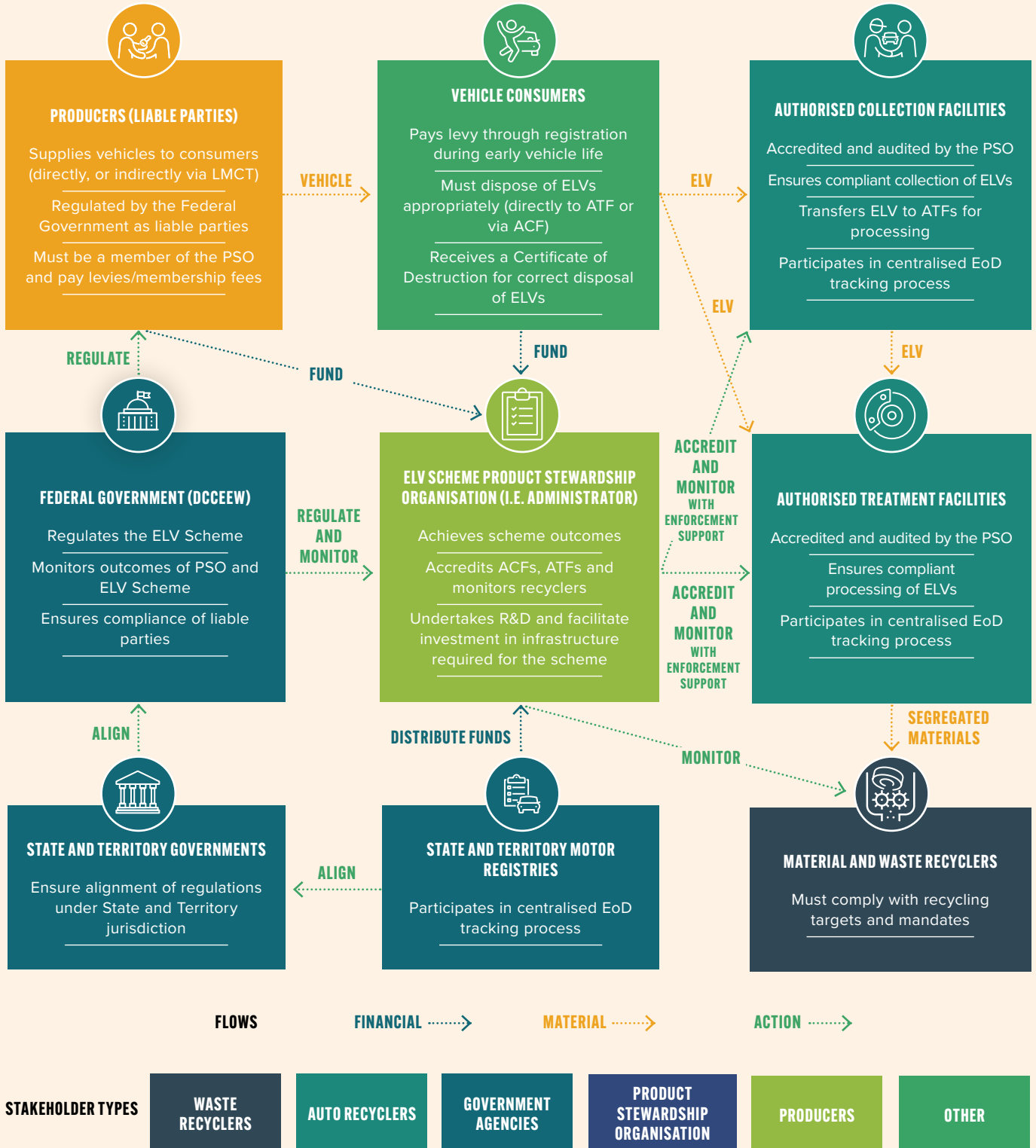


The funding model of a future Australian product stewardship scheme for ELVs is often the first point of focus. Whilst undeniably crucial, successful product stewardship is more than just funding and collection of product at end of life. There are significant challenges an automotive ELV scheme faces, and these primarily lie within the transformation and upskilling of the collection, dismantling, recycling and energy recovery elements.

ACCELERATION WHAT COMES NEXT

ELV Roles & Responsibilities under a co-regulated scheme

A simplified high level depiction of the ELV stakeholder ecosystem under a co-regulated scheme, and their roles and responsibilities, for the sub-options selected under each of the SDCs could be as follows:



Notes: 1. This model is illustrative only, designed to show high level interactions and operations of key ecosystem stakeholders rather than present a complete and comprehensive view

The work undertaken to date has provided a deep understanding of the challenges and complexities that developing an ELV scheme brings. This rich analysis also provides some clear direction on the most effective ways to take the stewardship scheme forward.

Recommendations have been developed that will provide the backbone for the design of the scheme, and although these principles are backed by deep analysis of successful schemes, nothing is yet confirmed.

A significant level of work is required to further refine these recommendations and plan their practical implementation.

This is work that cannot be done alone, the next critical phase will require all stakeholders to come together to support an agreed business plan which captures clear individual responsibilities and builds a forum for close coordination between industry, supply chain and government.

IMPLEMENTATION ROADMAP: A PHASED APPROACH

The implementation activities were grouped according to their activity type:

- Process
- Governance
- People/Resourcing
- Infrastructure/Technology
- Legal/Regulatory

Importantly, activities were also grouped chronologically to allow for the achievable, strategic and progressive delivery of the scheme.

Phase 1

Purpose: To progress and further define the specifics of the co-regulatory ELV scheme design, governance structure and financial mechanisms in collaboration with key ecosystem stakeholders.

OBJECTIVES:

- **Establish ecosystem** of stakeholders and communication channels;

- **Design and establish foundational administrative prerequisites:** establishment of a licensing and accreditation regime of ELV dismantling businesses to enforce minimum standards and practices and the monitoring of the ELV scheme performance; and establishment of traceable evidence of destruction linked to the vehicle deregistration process to ensure all ELVs are captured by the scheme.
- **Relevant regulatory procedures** completed by Federal and State and Territory Governments (i.e. RIS, ACCC etc.);
- **Additional research in Australia and internationally** to understand future processing and market opportunities for non-metal materials;
- **Established Product Stewardship Organisation** to conduct Phase 2 activities.

Phase 2

Purpose: To legally establish a co-regulatory scheme framework and equip the Product Stewardship Organisation (PSO) with the process, governance, people/ resourcing, technology/infrastructure and legal/regulatory enablers to operationalise the co-regulatory ELV scheme framework.

OBJECTIVES:

- **Define and establish a co-regulatory ELV scheme framework** (including vehicle information flows, program targets and program revenue sources) with government;
- **PSO equipped** with process, governance, people/ resourcing; technology/infrastructure and legal/ regulatory enablers to operationalise the co-regulatory ELV scheme, and;
- **Establish Infrastructure** to support scheme operations.

Phase 3

Purpose: To operate the co-regulatory ELV scheme, sufficiently supported by process, governance, people/ resourcing, technology/infrastructure and legal/regulatory capabilities to deliver on all scheme objectives.

OBJECTIVES:

- **Co-regulatory scheme operating** with optimised processes to maximise efficiency, and;
- **Scheme operations that maximise social and environmental benefits**, supported by a membership structure that ensure financial self-sufficiency of the scheme.

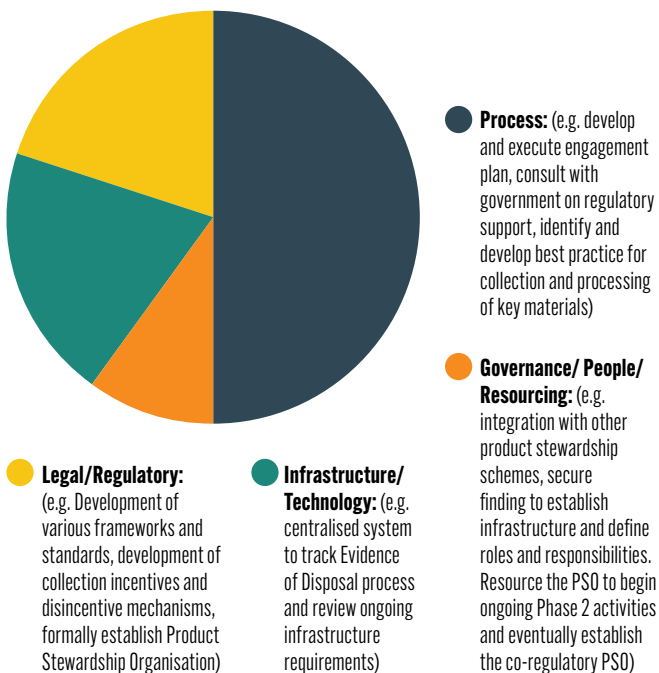
TIMELINE

H1 2023	NOW	2025	2026	on-going
COMMONWEALTH GRANT Conclusion of the five discrete projects funded through the commonwealth which provided the knowledge and insights required to execute the development of a product stewardship scheme for ELVs	PHASE 1 Socialise the proposed scheme design with Commonwealth, State and Territory Governments and FCAI and MTAA stakeholders Seek public sector's engagement and commitment towards establishment of ELV certificate of destruction and accreditation regime of ELV dismantlers	PHASE 1 Engagement and establishment of co-regulatory framework	PHASE 2 Introduction of co-regulatory framework	PHASE 3 Ongoing operation of co-regulatory scheme, and progressive expansion of its scope

These timelines are estimates only and are subject to the progress of additional project work and scheme development work among participating parties.

FUNDING PROJECTIONS

Whilst work is still being undertaken to determine the total cost of the development and operation scheme, it is likely that the breakdown in terms of share of funding will be broadly as follows:



STAKEHOLDER ENGAGEMENT

Activation of an ELV stewardship scheme requires strong collaboration between 50+ stakeholders who all have varying levels of interest and influence in the development of a scheme.

Partnership between FCAI and MTAA

The FCAI and MTAA intend to continue to lead this project by working closely together.

Socialise scheme design with FCAI and MTAA members

The proposed scheme design continues to be shared with FCAI and MTAA members and other key stakeholders to test ideas, gather feedback and make amendments, based on the needs of these key stakeholders.

Socialise with all levels of government

One of the first major insights garnered from the work done to date is that for the scheme to be successful, it must be truly national. However, the scheme must be flexible enough so it can operate in all state jurisdictions. As the custodians of waste management, local government support is also critical to the success of the scheme.

Financial planning to fund resourcing of phase 1 of the scheme

The cost to resource the delivery of the program has still to be determined and will be dependent on outcomes to the forthcoming work program. It includes activity relating to process, governance, people, infrastructure and technology and legal and regulatory compliance. Once the scheme design is agreed in principle by all key stakeholders, work must be undertaken to determine how these funds will be raised, and agree on a timeline of when funding will be available and allocated effectively.

Acquire resourcing required to execute phase 1 activities

Once the scheme is agreed in principle by key stakeholders, and a financial plan is developed to fund the scheme, it can begin acquiring the human resources required to execute phase 1 of the scheme.

NEXT STEPS: A PHASED APPROACH



PHASE 1

To establish the foundational prerequisites of ELV Certificate of Destruction and accreditation of ELV dismantlers, and further define the specifics of the scheme design, governance structure and financial mechanisms in collaboration with key ecosystem stakeholders.



PHASE 2

To legally establish a co-regulatory scheme framework and equip the Product Stewardship Organisation (PSO) with the process, governance, people/ resourcing, technology/ infrastructure and legal/regulatory enablers to operationalise the co-regulatory ELV scheme framework.



PHASE 3

To operate the co-regulatory ELV scheme, sufficiently supported by process, governance, people/resourcing, technology/infrastructure and legal/regulatory capabilities to deliver on all scheme objectives.

BUILDING OUR ELV FUTURE

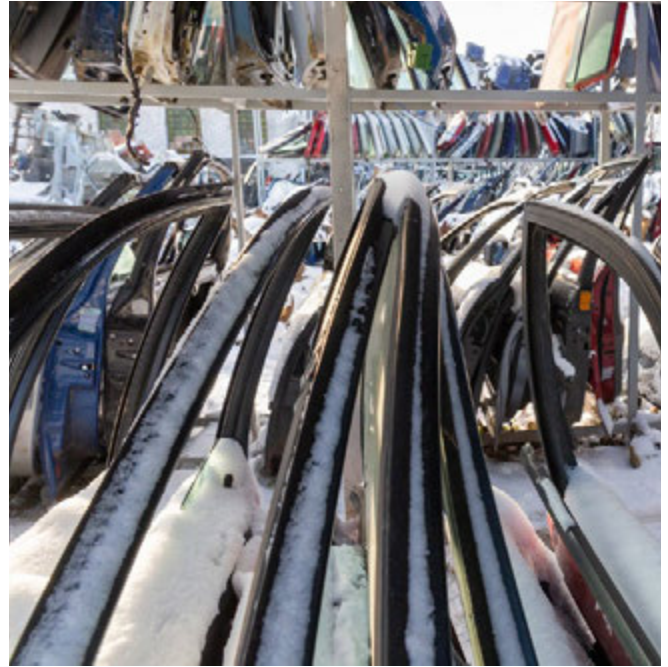
The number of vehicles reaching end-of-life will grow over the coming years. This will deliver some significant challenges.

However, despite the numerous structural, geographical, legislative and economic obstacles, the industry is solidly preparing to advance on a product stewardship journey.

Thanks to a Commonwealth grant, a lengthy and productive discovery phase has now concluded which has primed the industry for change.

Australia is in an enviable position whereby it can lean on the lessons learnt from successful ELV product stewardship schemes in markets including Japan, the UK and EU to build a scheme from the ground-up which satisfies the needs and requirements of the stakeholders of this complex industry.

But no one group can drive change alone. With the support of the industry's supply chain, government and the public, we are in a position to drive the industry forward and push towards circularity for the Australian automotive industry.



STATEMENT OF INTENT

The FCAI and MTAA are committed to improving the treatment of all end-of-life passenger vehicles (including SUVs) and light commercial vehicles (up to 3.5t) to maximise resource recovery and reduce waste.

The FCAI and MTAA support the introduction of a co-regulatory product stewardship scheme informed by the grant research and supported by nationally consistent regulations.

The FCAI and MTAA look forward to working with all governments and relevant industry stakeholders to establish the required administrative foundations (CoD and accreditation regime of ELV dismantlers) and finalise the scheme definition.

GLOSSARY

ACCC	Australian Competition & Consumer Commission	FCAI	Federal Chamber of Automotive Industries
ASR	Automotive shredder residue largely consists of non-metal vehicle parts for which there are currently very limited uses beyond landfill	FERROUS/ NON-FERROUS METALS	Ferrous metals contain iron, are magnetic and prone to rust. Non-ferrous metals do not contain iron, are not magnetic and do not rust
ACF/ATF	Authorised Collection Facilities are businesses meeting minimum mandated standards for the collection of end-of-life vehicles. Authorised Treatment Facilities are regulated businesses with specific duties, responsibilities and required operating standards for the destruction and certification of end-of-life vehicles.	MTAA	Motor Trades Association of Australia
ATF FENCELINE	One or a group of regulated businesses with specific duties, responsibilities and required operating standards for the destruction of motor vehicles	PARTS RECOVERY	The recovery of motor vehicle parts from end-of-life vehicles for reuse or repurposing
CoD	A Certificate of Destruction is a formal notice issued by an ATF to a vehicle's final registered owner	PIA	Privacy Impact Assessment
CO- REGULATION	Co-Regulation is an approach involving some government regulation in support of specific industry product stewardship schemes	PoC	Proof of Concept
ELV	An End-Of-Life Vehicle is a vehicle which has reached the end of its economic, mechanical and safe operating life	PPSR	Personal Properties Security Register
EPA	Environment Protection Agency	PRODUCT STEWARDSHIP	Product Stewardship is a process supporting the environmentally sound management of products over their life including their end-of-life disposal
ESG	Environmental, Social, and Governance	RECYCLING	Recycling is the process of converting waste products and materials into new products and materials
EU	European Union	RECYCLER/ DISMANTLER	A Recycler/Dismantler is a business which dismantles end-of-life motor vehicles for the commercial sale of parts and/or materials
EU DIRECTIVE	An EU Directive is a legal instrument requiring all member states to meet particular goals. It does not specify how the goals should be achieved	REPURPOSE	The recovery of components or materials for future use in a way for which they were not originally manufacture
EV	Electric Vehicle	RIS	Regulatory Impact Statement
		UK	United Kingdom
		VACC	Victorian Automotive Chamber of Commerce
		WASTE HIERARCHY	Waste Hierarchy is a ranking process for waste management options according to their environmental impact