Introducing an End of Life Vehicle Policy to Australia's Supply Chain

Index

Introduction

In the Australian context, end-of-life vehicles (ELV) are vehicles that are permanently removed from the national fleet. This can be through several pathways, namely through damage, un-roadworthiness, vehicle age, or at the owners request. Although the current number of ELV's entering the domestic waste stream on an annual basis is unknown, the standard industry figures are based upon a 2002 Environment Australia estimate that 750,000 vehicles would be designated as ELV by 2010[1]. By comparing this figure with the 2011 vehicle attrition rates (669,000) it becomes clear that the current number of vehicles annually attaining ELV status lies somewhere around the 700,000 vehicle mark.[2] Considering that the average mass of a passenger vehicle is approximately 1400 kilograms, this equates to 980,000 tonnes of waste. It is the issue of ELV waste, and the associated environmental impact, that is the focus of this paper.

Part 1

ELV recycling practices in Australia

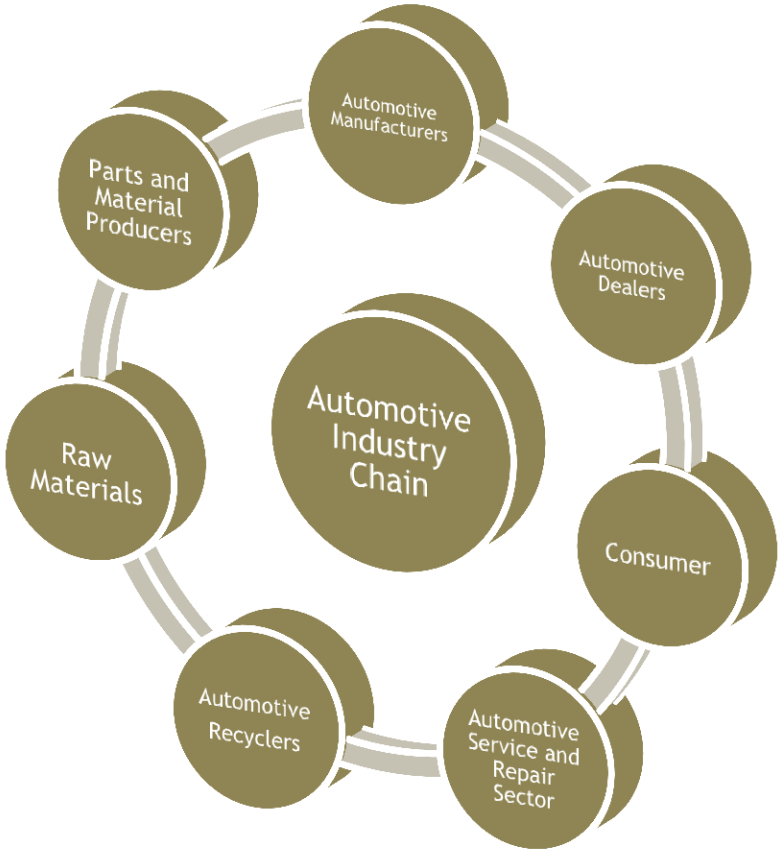
The Australian Bureau of Statistics estimates that the annual attrition rate for the national fleet (which comprises of 16.7 million vehicles[3]) over the past five years fluctuates between 3.5 and 4.1 per cent[4] . Vehicles that attrition from the national fleet can, in general terms, be categorised as either end-of-life vehicles (ELV's); vehicles that are undergoing restoration and/or placed into storage; or vehicles that are 'abandoned' (either deliberately or through neglect)[5].

The vehicles themselves can be further categorised based upon vehicle age and parts; newer vehicles with higher value parts, or older vehicles whose value is in scrap metal price as its components are typically worth considerably less than newer models.[6] Once parts and components are removed for reuse and resale, then:

[1] Environment Australia (2002), Environmental Impact of End-of-Life Vehicles: An Information Paper. Commonwealth Department of Environment and Heritage, pp 1
[2] Australian Bureau of Statistics (31 January 2012), Motor Vehicle Census, 9309.0, ABS, pp3.
[3] Australian Bureau of Statistics (31 January 2012), Motor Vehicle Census, 9309.0, ABS, pp 3
[4] Op cit, pp 19
[5] Environment Australia (2002), Environmental Impact of End-of-Life Vehicles: An Information Paper. Commonwealth Department of Environment and Heritage, pp 18.
[6] Automotive Recyclers of Canada (July 2011), A National Approach to the Environmental Management of End-of-Life-Vehicles in Canada: Submission to the Canadian Council of Ministers of the Environment. p 4.

…the residual vehicles, particularly older vehicles, are taken directly to the metal shredders or intermediary scrap metal merchants. The parts removed, the ELV shredded and the non-metal residue exits the shredders as waste residue known as shredder 'flock' or 'fluff'…which is mostly disposed of as landfill.[7]

Although the percentage of recycled scrap or components entering the Australian automotive chain is unknown, it is certainly present within the supply chain and its cross-sector use is perhaps best illustrated by the diagram below:



[7] McNamara, Nova (October 2009). Vehicle Recycling and Sustainability. International Specialised Skills Institute, Melbourne, pp 8.

Who are the Stakeholders?

ELV's are, due to their composition, a commodity in terms of spare parts and scrap metal values and a liability in terms of the disposal of hazardous materials and the cost of sending shredder residue or 'flock' to landfill[8]. As a 'commodity', this market is managed legitimately by parts recycling businesses, but also attracts a significant criminal element due to the lucrative nature of 'black market' spare parts and scrap metal. The National Motor Vehicle Theft Reduction Council (NMVTRC: of which AMIF is a member), recently reported that 86 per cent of vehicles stolen/ not recovered (SNR) are aged over 6 years, with two thirds of SNR's aged over 11 years old. These SNRs can largely be categorized as profit-motivated thefts, due to the value in parts (which are largely untraceable) and scrap metal.[9]

Because of the economic value of ELV's and the nature of the associated materials, there are numerous stakeholders who consider the issue of ELV's to be of importance from a policy perspective. These stakeholders include:

- AMIF;
- state and territory motor trades associations and automobile chamber of commerce;
- automotive manufacturers;
- automotive parts recyclers;
- automotive body repairers;
- motor vehicle dealers;
- insurers;
- Federal Government;
- State and Territory Governments (including Police, environment and transport departments);
- NMVTRC;
- Australian Air conditioning and Refrigeration Council;
- Insurance Council of Australia;
- Federal Chamber of Automotive Industry;
- Auto Skills Australia; and
- Environmental groups.

[8] McNamara, Nova (October 2009). Vehicle Recycling and Sustainability. International Specialised Skills Institute, Melbourne, pp 8.
[9] National Motor Vehicle Theft Reduction Council (2012). Annual Report 2012. p 8. www.carsafe.com.au

A snapshot of current ELV recycling practices and policy

There is no single legislative instrument that captures the safe disposal and recycling of ELV's. Currently, ELVs and their disposal are captured under a patchwork of Federal and State regulation and industry led stewardship schemes. Those mechanisms include:

- Greenstamp
- Refrigerant Handling License (*Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995);*
- *Personal Property Security Register;*
- AS 1940–2004 *The storage and handling of flammable and combustible liquids*
- P*roduct Stewardship for Oil Program (Product Stewardship (Oil) Act 2000);*
- *Product Stewardship Act 2011**
- State and Territory environmental legislation;
- Vehicle Information and Request System (database shared by insurance companies);
- National Exchange of Vehicle and Driver Information Scheme; and
- The Waste Tyres Product Stewardship.

* *The Product Stewardship Act 2011* provides a framework for the creation of voluntary and co-regulatory schemes by industry and Government to address specific waste issues on an industry-by-industry basis. ELV vehicles are not currently captured under that Act.

The growing debate

There is growing recognition of the need to address the issues surrounding ELV's and automotive recycling, and the domestic policy debate is growing. NMVTRC held a forum in mid-2012 to discuss the need for a voluntary Product Stewardship Scheme for ELV's, which would focus primarily on addressing stolen parts and scrap metal by introducing a product stewardship scheme that focused on the regulation and management of the parts supply chain.[10] However, it does not appear to address the issue of recycling, nor address environmental standards. It is the view of AMIF National Secretariat that, given the growing debate, that any policy or legislative response needs to holistically address the modern management and disposal of ELVs.

[10] NMVTRC, ibid.

Part 2

Developing a policy response

The current level of engagement within policy circles suggests that the issue of ELV's and their disposal is gaining traction. However, the platform put forward by NMVTRC does not, in the National Secretariat's opinion, comprehensively address the issues of waste stream management, nor does it address the generational change that is occurring in the retail motor trades, nor the difficulties that the Australian automotive manufacturers are facing given the current economic conditions. There are also other challenges facing the development of a comprehensive ELV policy platform that are artefacts of Australia's unique composition of the automotive market.

This presents an interesting, if not critical, juncture for AMIF in turns of policy development on this issue. The National Secretariat considers that this single issue could encapsulate the desire of the AMIF Board of Directors to develop forward-thinking policy. In other words, this issue has the potential to provide the impetus to develop a policy that acknowledges the generational change affecting the retail motor trades, but one that also, if developed in consensus with the entire automotive chain, may positively alter the course of the Australian automotive industry. It is suggested that, given the level of debate, the push for 'greener' policy responses and the uncertainties facing domestic manufacturing, an ELV cradle-to-grave scheme may gain the support of Government and industry alike.

The International Experience

Legislation for ELV exist in numerous countries including; the United States of America, the European Union, Japan, South Korea and China.[11] The schemes vary from voluntary arrangements to compulsive regulatory regimes. Some are 'user pays', while others are 'producer pays'. All however, share a legislative requirement to reduce waste. This section will primarily examine the US and EU experiences.

The European Experience

[11] McNamara, Nova (October 2009). Vehicle Recycling and Sustainability. International Specialised Skills Institute, Melbourne, pp i.

Following the ratification of the *Maastricht Treaty* in 1992 (which established the modern European Union), the Members of the EU initiated reform discussions to address the issue of waste stream management. Those discussions resulted in a policy of 'producer pays' in the management of waste streams for packaging waste, waste oil, batteries and polychlorinated biphenyls (PCB's) – some of which obviously captured individual automotive components.[12] In 1996, the European Parliament requested that the European Commission (the executive branch of the EU) consider regulations for ELV's, on the understanding that a regulatory regime would integrate and harmonise EU legislation, but would not impede competition across EU borders.

"…a [ELV] regulatory regime would integrate and harmonise EU legislation but would not impede competition across EU borders…At the core of the draft policy was the principle of 'extended producer responsibilities'."

At the core of the draft policy was the principle of 'extended producer responsibilities', which placed the cost burden of recycling on the manufacturer. This was met with significant industry resistance, as manufacturers and some governments such as Germany (which was led by Hans Schroder, a former automotive manufacture executive), and the United Kingdom were wary of the impact of the cost burden on their domestic automotive manufacturing. There were also concerns expressed in terms of much of the onus of undertaking significant change to the supply chain, and the introduction of that change, rested on manufacturers.[13] After significant stakeholder engagement, and recognition by automotive manufacturers that profitability meant extending beyond traditional production and vehicle sales, the European Parliament ratified *Directive* 2000/*53*/*EC*. That Directive outlined a new regime of material coding, information, treatment obligation and collection, namely the:

- limitation of the use of hazardous substances in their new vehicles;
- the requirement for manufacturers to design and produce vehicles that facilitates re-use and recycling;
- the integration of recycled materials into production;
- the establishment by member states of systems to collect ELV's and, where feasible, the collation of waste used parts removed when passenger cars are repaired;
- the adequate availability of collection facilities within their territory; and

[12] Smith, M.P. (2012), *Environmental and Health Regulation in the United States and the European Union,* Palgrave McMillan (USA) pp 92
[13] Niewenhuis, P and Wells, P.E (2003), *The Automotive Industry and the Environment: A technical, business and social future*, Woodhead Publishing, UK, pp. 51

- the transfer of ELVs to authorised treatment facilities.[14]

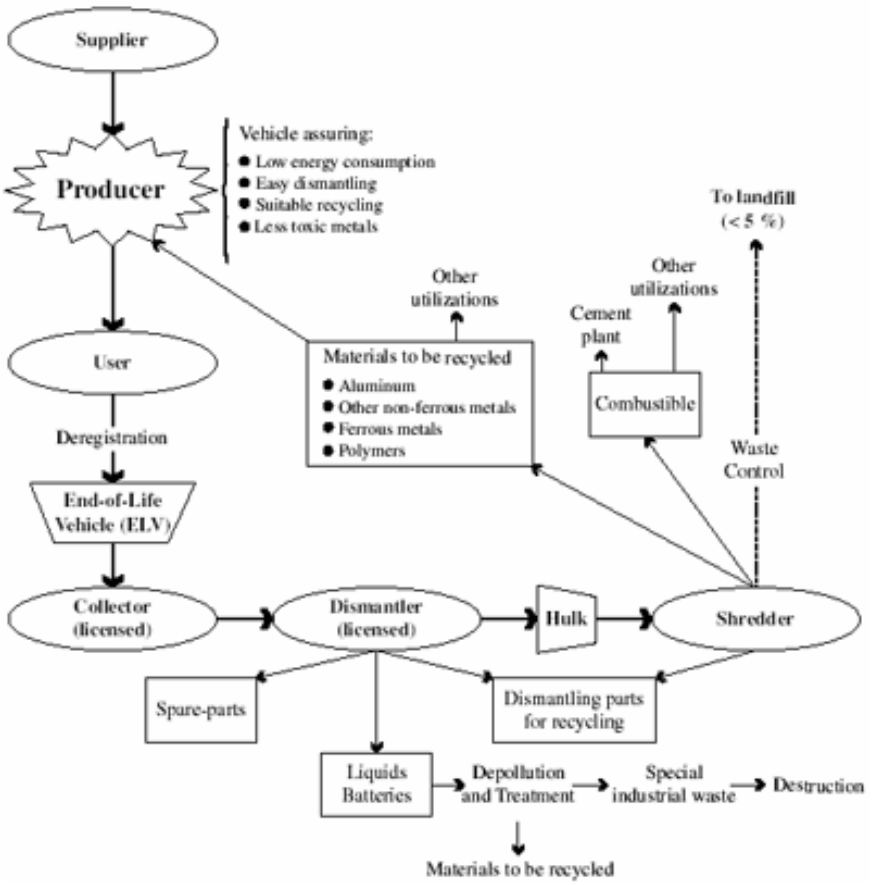
The stripping and disposal process outlined by the Directive requires that ELV's, upon their arrival at an authorized treatment facility, must:

- be stripped before further treatment or other equivalent arrangements are made in order to reduce any adverse impact on the environment;
- components or materials labeled or otherwise made identifiable in accordance with Article 4(2) shall be stripped before further treatment;
- hazardous materials and components shall be removed and segregated in a selective way so as not to contaminate subsequent shredder waste from end-of life vehicles;
- stripping operations and storage shall be carried out in such a way as to ensure the suitability of vehicle components for reuse and recovery, and in particular for recycling; and
- treatment operations for de-pollution shall be carried out as soon as possible.

"[the remanufacturing of parts such as engines can] . . . save more than half the energy and 80% of the material that would otherwise be used to make a new product from scratch."[16]

[14] European Parliament and Council (18 September 2000), *Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles*

The Directive also sets re-use and recovery thresholds of 85% by 1 January 2006 and 95 % by 1 January 2015. Similar thresholds were set for the rate of reuse and recycling.[15] By 2008, 20 member countries had achieved 80 per cent recovery and recycling rate, while a further 16 per cent had reached the 85 per cent target. Those targets have had a dramatic impact upon the consideration of recycling within the manufacturing process, particularly when viewed through the lens of emission and energy use reductions, as the remanufacturing of parts such as engines can ' . . . *save more than half the energy and 80% of the material that would otherwise be used to make a new product from scratch'*.[16] With over 50 per cent[17] of deregistered vehicles in the EU classified as an ELV (approximately 14 million vehicles) this represents a significant amount of reclaimable or de-pollutable materials. This is important, because although the EU policy is driven largely by environmental outcomes, it is also true to say that maximising recyclability to save land from being used as landfill is a priority of EU members.[18]



The EC is actively monitoring member states compliance with the directive and issues infringements, where applicable, in order to force compliance. In 2009 there were 9 non-compliance cases and six cases for non-reporting investigated for infringement.[19] Regulatory compliance has had a significant impact on individual state's ELV policies and upon the wider EU community. The concept of producer responsibility, and the requirement of manufacturers to meet vehicle emissions standards, has compelled European based manufacturers such as

[15] Op.cit
[16] Gerrard, J and Kandlikar, M (2007), "is European end-of-life vehicle legislation living up to expectations? Assessing the impact of the ELV Directive on 'green' innovation and vehicle recovery". Journal of Cleaner Production. Vol 15, pp 22
[17] European Parliament Directorate General for Internal Policies (October 2010). End of Life Vehicles: Legal aspects, national practices and recommendations for future successful approach.
[18] Vishesh, K and Sutherland, J.W. (2008). "Sustainability of the automotive recycling infrastructure: review of current research and identification of future challenges". *International Journal of Sustainable Manufacturing*. Inderscience Enterprise Ltd.Vol 1: ½. Pp 146

ELV Directive at work in the EU[19]

BMW and Mercedes Benz to actively develop 'end of pipeline' technologies'. While there has been a greater consideration of recyclability in the design process 'end-of-life design considerations' are a not a high priority for car manufactures. There has also been significant investment by manufacturers and component makers in product labeling and information databases such as IDIS (International Dismantling Information Systems) and the IMDS (International Material Database System), which was specifically developed by the auto industry to assist in compliance with the EU ELV Directive.[20]

The way in which ELVs are handled varies across the EU member states. The general experience, however, is similar to the United Kingdom's regulatory framework which is explored overleaf.

Case Study – Applying the ELV Directive in the United Kingdom

Approximately 2 million vehicles are classified as an ELV in the UK each year; and on the basis of this classification they are deemed to be hazardous materials until such time as the vehicle is properly decommissioned.[21] Vehicles deemed to be ELV by the last owner are taken to an Authorised Treatment Facility (ATF), where qualifying ELV's (passenger vehicles and light goods vehicles up to 3.5 tonnes and 3 wheeled motorcycles), are "taken back" free of charge by the manufacturer and disposed of in a lawful and environmentally-sound manner.[22] The vehicles owner is then issued with a certificate of destruction, which ensures that the car has been legally destroyed (although the car may physically exist in storage at the ATF site, but it is no longer the responsibility of the owner).[23] Possession of the certificate ensures that the vehicle owner is not liable for road tax and is not liable for an 80 pound fine.[24]

[19]Gerrard and Kandilar, op.cit., pp. 25
[20] McNamara, op.cit, pp. 23
[21] Environment Agency, www.environment-agency,gov.uk/business/regulations/31887.aspx
[22] Government of the United Kingdom (2003*), The End of Life Vehicle Regulations 2003*, www.legislation.gov.uk/uk51/2003/2835/part/vi/made
[23] Driver and Vehicle Licensing Agency, *Certificate of Destruction INF156*. Department of Transport UK.

To ensure that vehicles are properly depolluted and decommissioned, ATF undergo regulatory inspections by the Environment Agency to ensure compliance. Those inspections are carried out annually (if not more) and failure to comply can incur penalties including higher annual ATF registration fees.[25] In November 2012, the Agency reported that 1,689 ATF facilities complied with ELV depollution requirements.[26] Although below the Directive's target, the reuse, recycling and recovery rates have risen from 80.99 in 2006 to 83 per cent in 2010.[27] However, individual UK ATF's have reported recycling and reuse rates of 95 percent.[28] In order to achieve the 2015 target of 95 per cent, the UK Government announced, in November 2012, that it would allow for automotive shredder residue (ASR) to be classified as an energy source rather than as a waste product. When combusted, ASR produces energy, which means "*That energy can be recovered... so it can officially be designated as a recovery activity rather than disposal*." [29]

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However, the Motor Vehicle Dismantler's Body (MVDB), which represents UK auto recyclers, has serious concerns with the current systems. Those concerns include estimates that, . . . *up to 40 per cent of UK ELVs are treated illegally*", with much of the blame landing on shredder operators, which MVDB considers are, in some instances, failing to de-pollute vehicles they receive directly, failing to maintain proper vehicle identification records and accepting vehicles from third parties without exercising their duty of care.[30]

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[25] Environment Agency (April 2011), *Waste Crime Innovation Programme: End of Life Vehicles Information for Authorised Treatment Facilities*. http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/geho0411btwg-e-e.pdf m

[26] Environment Agency, http://www.environment-agency.gov.uk/business/regulation/65470.aspx

[27] Eurostat (updated 9/11/2012). End of Life Vehicles: Reuse, Recycle and Recovery, Totals.

[28] Recycling International (18 December 2012), "Axion Polymers invest in ELV operation", *Recycling International*. http://www.recyclinginternational.com/recycling-news/6750/plastic-and-rubber/united-kingdom/axion-polymers-invests-elv-operation

[29] Reece, Annie (9 November 2012), "ELV shredder residue included in recovery targets". *Resource*. http://www.resource.uk.com/article/UK/ELV_shredder_residue_included_recovery_targets-2414#.UPTSBx27Iuc

[30] Ambose, Charles (September-October 2012), "Automotive Recycling UK", *Automotive Recycling*, Automotive Recyclers Association, Virginia, pp. 36

Compliance costs are also an issue, given the complexity of the regulations.[31] From late 2011 to mid-June 2012, the UK Department for Business, Innovation and Skills charged 7 firms with failure to comply with ELV targets, or failure to provide the UK Government with reporting information. The MVDB suggests that as many as 1000 ATF's are in breach, with "*. . . the 300 or 400 (ATF's) that have met the target have borne all of the costs, while the others have ignored it.*"[32]

The impact of the ELV directive upon the auto recycling sector appears to have made both positive and negative changes to the sector. While, clearly, improvements are being made on the environmental front, the comments from MDBK suggest that compliance is a real issue, as is the rise in illegal operators. With two years to go before the 95 percent targets are enacted, the sector is likely to come under further scrutiny.

The American Experience

Like Europe, the United States Government gave serious consideration to a national waste stream policy in the 1990's; with the Clinton Administration's Presidential Council on Sustainable Development determining that, " *. . . all actors in the product chain share responsibility for ameliorating the environmental impact of product waste*". [33] However, the American policy response to automotive waste is largely focused on reducing waste, such as vehicle emissions, during the use phase through federal legislation such as the *Engine Emission Standards, Corporate Average Fuel Economy (2000)* regulations and individual state legislation. While producer responsibility is at the core of ELV waste policy, the reality is that ELV recycling is driven by profit[34], with over 95 percent of ELVs participating in a market-driven recycling infrastructure, with no added cost or tax to consumers[35], and with a recycling/recovery rate of 84 per cent of the entire ELV fleet.[36] At the time of writing, the only legislative instrument on ELV's to be introduced to Congress was the 1991 *Automobile Recycling Study Act:*

> *. . . which would have required the EPA to undertake a study of how best to increase recycling of auto components…substitution for toxic materials and….attention to environmentally sound disposal in product design*"

[31] Ambose, op cit, pp. 36
[32] Recycling International (18 December 2012), op.cit
[33] Smith (DATE), op.cit. p 99
[34]Kumar, V and Sutherland J.W, (2008), op.cit, pp146
[35]US Department of Energy http://www.es.anl.gov/energy_systems/CRADA_Team/index.html accessed 22 January 2013
[36] United States Council for Automotive Research (25 June 2007), *USCAR's VRP Contracts with ECO2 Plastics to Explore 'Rinse and Recycling' Applications,* *http://www.uscar.org/gues/article_view.php?articles_id+146*

Needless to say, this Bill for an Act never passed the Committee stage.[37] Furthermore, the policy response to ELV are unregulated at a national level and ". . . *individual States are free to adopt inconsistent regulations, or forgo regulation altogether*"[38]. There are examples of specific legislation for parts and materials that enter the waste stream, such as mercury switches (federal) and legislative protection against materials improperly entering the waste stream, but they do not specifically capture elements of vehicle decommissioning such as waste motor oil.[39] The Automotive Recyclers Association, which is the peak industry body for US Auto-Recyclers, has a policy position on ELVs that is supportive of legislation that:

> *. . . allow licensed automotive recyclers to acquire salvage and end of life vehicles when the certificate of title is not available, for the sole purpose of recycling parts and materials.*[40]

However, there is no specific policy position on ELV recycling and environmental practices with:

ELV disposal facilities in many States …free to irresponsibly dispose of ELV waste that does not create potential revenue'.[41]

CARS was not deliberately used as a policy mechanism to promote vehicle recycling, as the policy required drive trains and engines to be destroyed immediately and for subject vehicles to be crushed or scrapped within 180 days[43]; thus negating the benefits of parts recycling.

The exception is the now expired Car Allowance Rebate Scheme (CARS) also known as 'Cash for Clunkers'. During the Global Financial Crisis of 2008-2009, the US Government enacted the CARS stimulus package, which encouraged citizens to trade in their old vehicles for a new fuel efficient vehicle in return for a subsidy of US$3500 -US$4500. Intended purely as a measure to:

> *…prop up the faltering American auto industry and make the nation's car and truck fleet marginally more efficient…*

vehicles traded in under the 'Cash for Clunkers' scheme were treated as ELV's.[42] However, CARS was not deliberately used as a policy mechanism to promote vehicle recycling, as the policy required drive trains and engines to be destroyed immediately and for subject vehicles to be crushed or scrapped within 180 days[43] ; thus negating the benefits of parts recycling.

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[37] Smith, Mitchell (2012). Environmental and Health Regulation in the United States and the European Union. pp 105.
[38] Konz, Raymond J (2009). "The End-of-Life Vehicle (ELV) Directive: The Road to Responsible Disposal". *Minnesota Journal of International Law*, Vol 18. pp. 432
[39] Konz (2009), op.cit, pp. 452
[40] Automotive Recyclers Association website. http://arav3.timberlakepublishing.com/content.asp?admin=Y&contentid=796 accessed 14 February, 2013
[41] Konz (2009), p 432

While manufacturers focus on fuel efficient vehicles and on environmentally friendly cost reduction exercises (such as the collection of metal shavings during the production process at General Motors Plants as part of a 'Zero Waste' strategy[44]), there is little evidence of deliberate strategies to consider the end life of vehicles during the design process. Bill Ford, Executive Chairman of Ford Motor Company, is reported as being open to closed-loop chains in the American market[45], however there seems little animus within US policy circles or industry to enact significant reform of ELV recycling practices. Rather the focus remains on ELV policy that is led by profitability. With ARA reporting that its larger scale members are focused on growing their businesses in international marketplaces[46], it is likely that ELV legislation and regulation will maintain the status quo in the short to medium term.

The Japanese Experience

Although largely based upon the EU Directive, the Japanese ELV policy differs on three points:

- it was designed to encourage Japanese manufacturers to remain competitive for the European market;
- it is a user pays system, and;
- it is designed to provide incentive for producers to consider recycling needs in the product design process[47].

The table below illustrates the differences:

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[42] New York Times (Updated 20 August, 2009). "Car Allowance Rebate System (Cash for Clunkers)". *The New York Times*. http://topics.nytimes.com/topics/reference/timestopics/subjects/c/cash_for_clunkers/index.html

[43] US Department of Transport (27 July 2009), *Transportation Secretary Ray LaHood Kicks-Off CARS Program, Encourages Consumers to Buy More Fuel Efficient Cars and Trucks*. http://www.nhtsa.gov/Laws+&+Regulations/CARS+Program+Official+Information

[44] Motavalli, Jim (10/5/2010), "G.M. Aims for Zero Waste". *The New York Times*. http://wheels.blogs.nytimes.com/2010/05/10/g-m-aims-for-zero-waste-at-half-of-its-plants/

[45] Konz

[46] Wilson, Michael E. (September-October 2012). "International Automotive Recycling: A Global Awareness of significant Issues Ahead: United States". *Automotive Recycling. Vol 32:5. Automotive Recyclers Association. Virginia, USA. pg 24*

[47] Smith, Mitchell P. (2012). *Environmental and Health Regulation in the United States and the European Union.* USA, Palgrave MacMillan. P 100

ELV Policy Comparison

Japan

Automobile Recycling Law promulgated July 2002, to enter effect by January 2005

Vehicles covered inclede four-wheeled passenger cars and commercial vehicles (including everything from mini-cars to large trucks and buses).

Car manufacurers obligations:

- collection and disposal of flurocarbons and airbags
- collection and recycling of shredder residue
- setting and publication of user charges
-design and manufacture of car models with consideration for environment and recycling

Costs are borne by users and deposits are managed by a fund management corporation. The deposit must be made at the time of purchase for new vehicles and older vehicles users pay deposits at the time of automotible inspection

European Union

ELV Directive effective from October 2002, with legislation to be enacted in EU member states in 2002

Passenger cars with seating capacity of nine or less and and commercial vehicles with gross vehicle weight of 3.5 tonnes or less.

Car manufacturer's obligations:

- establishement of ELV collection and recycling netweok from 1 July 2002 ffor all newly registered vehciles

-from 1 Jaunuary 2007 all ELV's are subject to probitiion of use of hazardous substances (lead,mercury,cadmium, hexavalent chromium)

Vehicles sold from 1 Jul, 2003 must achieve a recyclability rate of 95 per cent.

All or most of the cost is borne by car manufacturers.

Part 3

What would an Australian ELV cradle-to-grave scheme look like?

This is not a new idea for the Australian automotive sector, with Auto Parts Recycling Association of Australia (APRAA) developing a strategy as early as 2004 for a closed-loop supply chain.[48] Recent Government policies have focused upon the development and funding of 'green innovation' through the Green Car Innovation Fund (2009-2011). That fund, however, was primarily focused upon emissions reduction through the production and life of the vehicle, rather than recycling and reducing waste at the ELV stage.

From a policy perspective, the aim of federal ELV cradle-to-grave scheme needs to be pursued with the goal of creating a whole-of-government, industry supported, sustainable, profitable (or break-even) national scheme. Furthermore:

> *…each recovery option (e.g. recycling, re-use, energy) should be viewed as a means of moving toward environmentally sustainable production, rather than an end itself*[49]

To do this, would require a significant shift in the automotive industries and government perspective to ensure that 'green' vehicles are considered through the entirety of the vehicles life. There is an opportunity to tie in any policy approach to Government as a desire for achieving harmonization of EPA regulations under the Council of Australian Governments (CoAG) harmonization policy. This avenue is supported by the Productivity Commission's 2006 report into Waste Management which states:

> *While states and territories hold most of the policy levers in waste management the Australian Government has significant coordinating and leadership roles to play* [50]

Given the government's clear preference for industry-led and Government-supported product stewardship schemes, rather than legislated regulatory regimes, it is clear that a cradle-to-grave ELV scheme could be introduced if it gained traction in policy circles.

The National Secretariat has designed a draft model, the ELV Recycling Fund and Register to stimulate consideration and debate about the structures, benefits and risks that a formal ELV recycling scheme could have in an Australian context.

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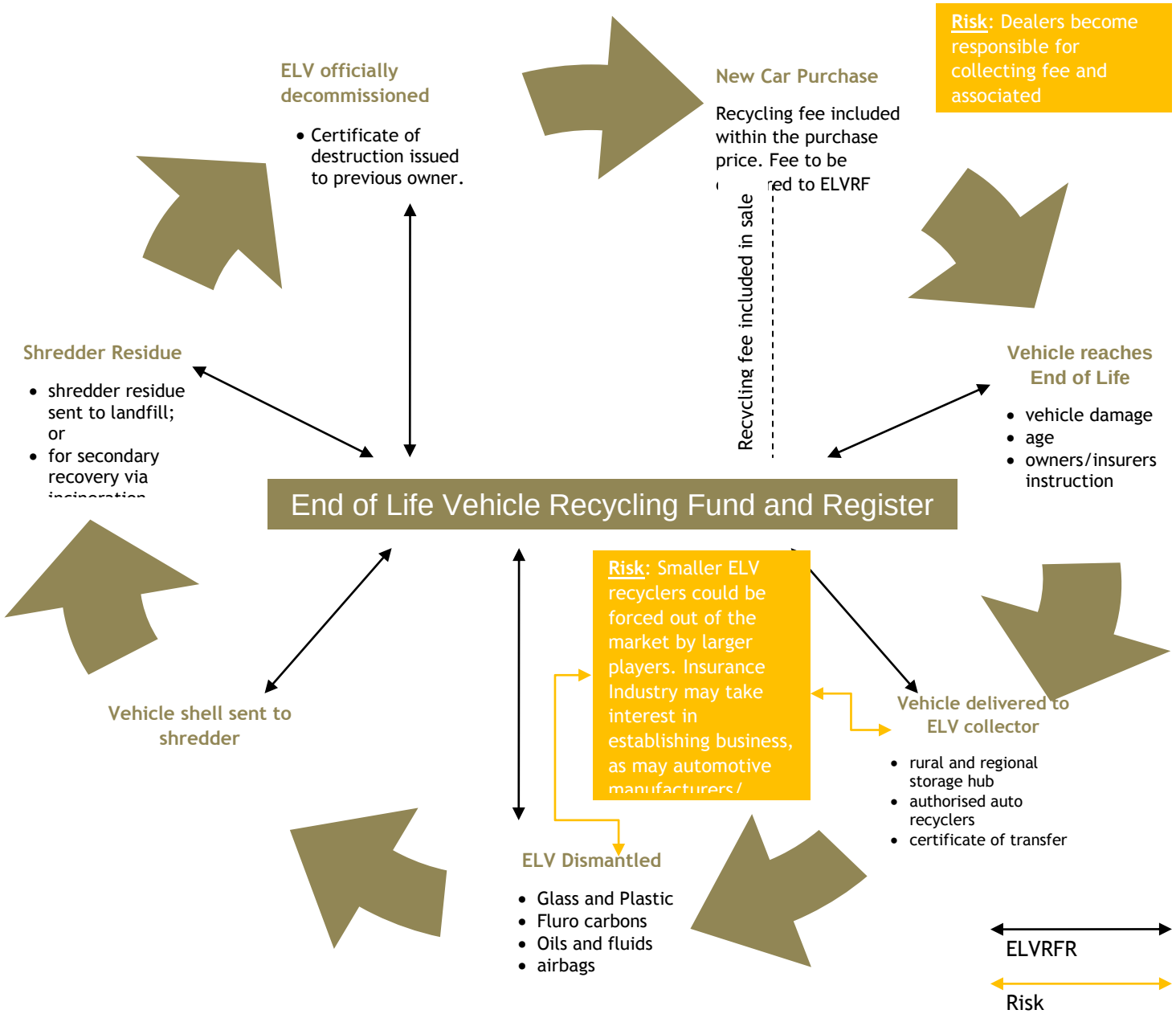
[48] www.apraa.com.au

[49] Gerrard, J and Kandlikar, M (2007), "is European end-of-life vehicle legislation living up to expectations? Assessing the impact of the ELV Directive on 'green' innovation and vehicle recovery". Journal of Cleaner Production. Vol 15, pp 17

[50] Productivity Commission (2006). *Waste Management: Productivity Commission Inquiry Report*. Commonwealth of Australia


ELV officially decommissioned
• Certificate of destruction issued to previous owner.
New Car Purchase
Recycling fee included within the purchase price. Fee to be
ed to ELVRF
Risk: Dealers become responsible for collecting fee and associated
Recycling fee included in sale
Shredder Residue
• shredder residue sent to landfill; or
• for secondary recovery via
Vehicle reaches End of Life
• vehicle damage
• age
• owners/insurers instruction
End of Life Vehicle Recycling Fund and Register
Risk: Smaller ELV recyclers could be forced out of the market by larger players. Insurance Industry may take interest in establishing business, as may automotive manufacturers/
Vehicle shell sent to shredder
Vehicle delivered to ELV collector
• rural and regional storage hub
• authorised auto recyclers
• certificate of transfer
ELV Dismantled
• Glass and Plastic
• Fluro carbons
• Oils and fluids
• airbags
ELVRFR
Risk

As the draft model illustrates, an Australian ELV recycling policy is not as simple as introducing a carbon copy of the EU Directive or Japanese ELV scheme, rather there is a complexity to the Australian context that needs to be explored and addressed. Nor does the American model, which is, in the National Secretariat's opinion, the 'closest fit' to the Australian landscape, suit, as the American market differs in that a significant proportion of its national fleet is leased[51]. Using the draft model as a mechanism to stimulate consideration, there are, at first glance, questions that require serious consideration and debate:

How would a vehicle be classified as an ELV for the purposes of a recycling program?

Given that the average vehicle in the Australian fleet is 10 years old, and for reasons outlined in the social implications sections below, the National Secretariat believes it would be difficult to place a mandatory 'scrapping' age on a vehicle. However, incentives could be used to encourage vehicles which are, for all intents and purposes, abandoned (but still retained) by their owners. The scheme could, with Government support, capture new vehicles from a pre-determined date of sale and provide a legislated ELV date.

Who is responsible for the Fund and Register and who dictates the recovery fee?

The issue of managing the Fund and Register and the determination the value of the recovery fee would need to be determined and managed by industry and government; an existing example of such a partnership is the recently formed Tyre Stewardship Australia (of which AMIF is a member and vocal contributor to) which could be used as a model for ELV Stewardship. Accordingly, the Board would be made up of Stakeholder representatives and scrutinised by the Australian Competition and Consumer Commission.

Who collects the recovery fee?

The issue of collection is, in the National Secretariat's opinion, a major hurdle for any potential ELV recycling scheme. AADA and its dealer members would object vociferously to the imposition of any requirement to collect an impost and the associated costs in terms of paper work and auditing that would be required to ensure adherence to legislative requirements. If the cost of the impost was to be collected by the manufacturer, as a separate invoice line that is not subject to margin, this then raises questions of auditing foreign entities and holding them accountable. It is arguable that if the ELV impost was to be collected by the state and territory Road Transport Authorities (or equivalent) in much the same way as stamp duty, then, like stamp duty, dealers will remain the collectors of the impost. There is also, such as in Japan, the opportunity for

[51] Gorzelany, Jim (5 June 2013). "Hottest New Car Lease Deals For Under $300/Month". http://www.forbes.com/sites/jimgorzelany/2013/06/05/best-new-car-lease-deals-under-300month/

consumers to directly pay the impost to the Fund. In the Australian context, though, ,That would require either the states to collect (through RTA's) or require a Federal Government shop front, such as Medicare, to act as the collection point.

Who collects and holds the vehicle?

Given the physical concentration of automotive dealerships in Australian locales and the limited capacity of dealerships to 'hold' returned ELVs, it would be impractical for dealerships to act as a collection point for consumers disposing of ELV's. AMIF considers that it would be more realistic and sensible to establish designated 'collection points' , which could include a combination of accredited automotive recyclers and/or regional and rural collection points that legally holds cars and then transfers them to accredited dismantling facilities and/or manufacturer owned and operated collection and treatment facilities.

There is also a question of land 'zoning', as land for this purpose would need to meet the local/state zoning and environmental requirements. In regional and rural areas, the use of 'abandoned' service stations could be examined.

Who 'owns' the vehicle at this point?

Consumers who return their vehicles to the collection point would receive a 'deed of transfer', which would confirm that ownership had been transferred to the collecting agent and, at the time the vehicle is destroyed, the previous owner would receive a certificate confirming the vehicle's destruction. It is suggested that this could run as part of the National Exchange of Vehicle and Driver Information System (NEVDIS).

What are the social implications of a mandatory ELV recycling policy?

AMIF and its members are keen to avoid a scenario similar to the 'Cleaner Car Rebate Scheme' (CCRS) and consider that any policy needs to be done in a manner that incorporates the public interest, yet does not impose unreasonable impost upon its members. That said, any policy must consider the social implication of a mandatory ELV policy.

For example, one of the issues to come out the failed 'CCRS' policy was the impact of 'transport disadvantage', being the transport difficulties that restrict Australian's 'capacity to access services and participate in activities' either through lack of vehicle ownership, or through the costs associated with maintaining a vehicle[52]. Research undertaken by the NMVTRC in 2003 suggests that ownership of older vehicles is not necessarily based upon income or socio economic status. Indeed, anecdotally,

[52] Rosier, K and McDonald, M (August 2011), "The relationship between transport and disadvantage in Australia'. *CAFCA Resource Shee*t. Communities and Families Clearinghouse Australia.

it remains the case that many middle class families own older model cars as their second or third family vehicle. For lower income families, car ownership represents, for many, their single most valuable asset.

The social cost of a blanket imposition of a mandatory ELV recycling policy would certainly disadvantage individuals and families, as the cost of replacing an ELV with a brand new vehicle varies from $9990 for a Chery J1, to a Barina Spark for $13990 and then Mazda 2 and Ford Fiesta at $15990. None of those vehicles can be classified as 'affordable' by people of lower socio-economic status and all of these vehicles are classified as small vehicles, and may not be the equivalent size, or fit the purpose, of its predecessor. There are also the associated costs that come with servicing newer vehicles which, AMIF understands, would impact upon the running costs.

What is the worst-case scenario for automotive RSR&R sector if such a framework were enacted?

The international experience indicates that the number of automotive recycling business will constrict, with larger and more future-forward operations expanding their business models. This scenario supports AMIF's view that generational change is occurring across the RSR&R sector and that 'old school' businesses that fail to grasp change will close.

Why can't we just use an existing ELV model?

Unlike European and Asian countries that have existing ELV models, Australia is unique firstly in terms of size, scale and secondly because of the 66 marques for sale, which only 3 have current vehicle manufacturing production facilities in Australia. There is no existing framework or capacity for the overwhelming majority of manufacturers to add ELV arrangements and this will be made more complex as the last three domestic manufacturers close production facilities by 2017. There is also the issue of generational transition within the domestic recycling sector to consider.

It needs to also be acknowledged that in those countries and regions that do operate ELV schemes, the vehicle market composition is almost a direct contrast, or reversal, of the composition found in Australia. That is to say that in, say, Japan, Europe and the United States, that the majority of cars either sold their or on the road are domestic in origin. The reverse applies in Australia, where only approximately 16 per cent of the vehicles now sold are produced locally. Of the remaining 84 per cent, the composition of that fleet are from a wide diversity of overseas sources.

It needs to also be acknowledged that, in reality, even Australia's domestic vehicle production is 'driven' largely by those manufacturer's overseas 'masters'. This reality places further difficulty in the way of developing 'unique-to-Australia' policy responses given the small size of those manufacturer's domestic production within a global context. The AMIF National Secretariat estimates, for example, that the totality of Toyota's Australian domestic production – of which it must be noted

some 60 per cent is exported – represents a little over 1.2 per cent of Toyota's global production. This places the prospect of manufacturers (such as Toyota by way of example only) embracing g specific accommodations to meet any Australian ELV requirements in other, much larger, market jurisdictions.

How would an ELV recycling policy work in regional and remote areas?

To quote Australian historian Geoffrey Blainey, the 'tyranny of distance' in terms of the distance, remoteness and, in some cases, accessibility, of regional, rural and remote towns and townships is a factor in the development of a successful national ELV policy.

There is also significant opportunity to provide automotive skills training to indigenous Australian's and to create a used parts market in these communities, with 'good' parts being returned for sale.

The National Secretariat understands that a small scale collection and recycling program was undertaken by the East Kimberly Community Development Project in 2009, as a response to environmental hazards, safety and health concerns relating to leaks in bore water, child safety and a breeding site for vermin and snakes. The program, which took place in the Shire of Wyndam and East Kimberly (which covers approximately 121,000 square kilometres), was undertaken in the following method:

> *The process undertaken was staff visited sites to confirm with Elders and Traditional Owners which vehicles were to be removed. Once this negotiation was completed each vehicle was sprayed with a red cross. If no claims of ownership were received by the community representatives after a time of about 3-4 weeks vehicles were removed. Following pickup, most vehicles were delivered to Shire waste centres at Kununurra and Wyndam. Due to the distance associated with a few of the outstations, some vehicles were relocated to community waste sites.*[53]

The National Secretariat spoke to the CEO of EKCDEP about the program, and when asked about how it could be improved, the Secretariat was advised that the EKCDEP had the capacity and assets to go to remote communities and remove ELV's using their own assets and could possibly enact a recycling program employing Indigenous apprentices under a Certificate 2 Automotive to remove parts at the EKCDEP depot under the supervision of a suitably qualified parts recycler/mechanic.

[53] Australian Indigenous Health Info Net (unknown). "Community vehicle recycling project". www.healthinfonet.ecu.edu.au/key-resources/programs-projects?pid=765 accessed 2 September 2013

The National Secretariat has also spoken to MTA NT Executive Director, Mr. Peter Donovan, about its efforts to enact a similar ELV collection and recycling program. With many areas of the Northern Territory classified as remote and/or with limited accessibility due to the 'wet season', these communities are serviced by road freighters or barge, often returning empty to major centres. The opportunity to 'backload' ELV's on these empty road freighters and barges for recycling are viable, provided that transport companies, industry and government act in a culturally sensitive manner and engage appropriately with Elders and Traditional Owners. There is also significant opportunity to provide automotive skills training to indigenous Australian's and to create a used parts market in these communities, with 'good' parts being returned for sale.

What do we do with the recycled product?

The opportunity to create a 'closed loop' supply chain would be the ideal outcome, with recycled material re-entering the manufacturing stream. However, given the uncertainty surrounding continued domestic vehicle production this appears unlikely, unless urgent intervention via a whole-of-industry White/Green paper process is undertaken. If vehicle manufacturing ceases in Australia, then the opportunity to 'sell' to other domestic industries or to market recycled products as an export commodity should be considered, however this is outside the scope of the AMIF to determine, and would require the support of Government and industry.

Technology, skills and infrastructure

A literature review conducted by the National Secretariat suggests that there has been two pieces of significant ELV specialised research funded through the Melbourne based International Specialised Skills Institute. Those two research efforts are the 2009 paper *Vehicle Recycling and Sustainability* by Ms Nova McNamara (who is Ford Australia's first 'Vehicle Recycling Engineer' and specializes in ELV recycling and sustainability) and a 2002 paper *Waste Management in Collision Repair* by Garry Edwards (Manager of Kangan Batman TAFE's Competitive Manufacturing Section). This is notable, as the authors represent different sectors of the automotive sector and have different viewpoints. One from a production design point, the other from a body repair/recycling background.

McNamara writes that Australian manufacturers are designing and producing vehicles for export to Japan, South Korea and China – all countries with existing ELV legislation[54] -- so it is fair to say that some capacity exists within Australian manufacturers to build vehicles and components to the standards of international ELV policy. This is truer still when the

[54] McNamara, N (2009) op.cit, pp.i

technology and skills for closed loop supply chains exist within the international companies that own the Australian offshoots.[55]

Due to the 'diversification, fragmentation and segmentation' of the Australian automotive industry[56], and the uncertain future of domestic automotive manufacturing and the need for adaptive business models within the retail, service, repair and recycling sectors, it makes sense to create a model that relies upon "*business opportunities….(to) pave the road to…sustainable supply chains*"[57].

However, an immediate issue with the establishment of any scheme is the issue of rural and regional collection, infrastructure, and skills and training.

Any scheme would have to identify collection points and routes and work in collation with industry to develop an automotive training package. Skills shortages would need to be addressed (skills shortages already occur in the retail, service and repair sectors of the automotive sector).

Conclusion

The work of NMVTRC and its contribution to the emerging policy debate on ELVs is generating awareness with many Industry and Government stakeholders, which suggests that any contributions that AMIF may make broadening the debate would present the opportunity to develop an industry wide proposal on ELV cradle-to-grave management.

It is suggested that a future scheme be based upon an industry wide proposal to Government that seeks and supports an ELV product stewardship that is based upon a cradle-to-grave management of motor vehicles.

Gaining the support and contribution of manufacturers and insurers would provide evidence to Government of the industry's commitment to innovation, reducing carbon emissions and, in the case of Manufacturers, this could be seen as a commitment to continue domestic production. This support would also provide, in practical and economic terms, assistance in the development of a proposed scheme.

[55] McNamara, op cit, pp. 10
[56] Australian Motor Industry Federation (July 2013), *Automotive 2018: An Industry at Cross Roads*, Australian Motor Industry Federation.
[57] Le Blanc, HM (2006), "Closing Loops in Supply Chain Management: Designing Reverse Supply Chains for End-of-Life Vehicles", *PHD Thesis,* Tilburg University, Tilburg, pp. 4

Given that the Australian automotive industry in its entirety is undergoing generational change, it seems an opportune time to undertake significant action on this matter. The following recommendations are made accordingly:

1. That the paper be provided to APRAA for feedback, modification and further consultation, (particularly through the planned conference.
2. With the go ahead of APRAA and the AMIF Management Committee and Board, make initial representations to FCAI, NMVTRC, manufacturers, Auto Skills Australia;
3. Simultaneously provide a copy to the staff of the Federal Environment Department and Federal Environment Minister.
4. If successful in these representations, establish a cross industry working group to progress the initiative;
5. Engage a consultant to do a detailed analysis/discussion paper/draft scheme (funded either entirely by AMIF or by working group stakeholders; and
6. Present a final policy position to Government – either as a unified industry **or** in alliance with key stakeholders **or** AMIF, complete with potential draft legislation and regulations.

National Secretariat

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