Global Best Practices for End of Life Management

Project Title	Global Best Practices for End of Life Management
The Need (Gap)	There is greater emphasis in N. America on the (short-term thinking) front end design/engineering, but insufficient emphasis given to EOL considerations (i.e., long-term thinking), given the complexity of the modern vehicle, higher value and precision engineering of components (e.g., Tailor-welded blanks), diversity of materials (e.g., multiple materials), electronics, etc. Most materials are down-cycled (with major environmental and social impacts) at EOL instead of seeking opportunities to raise the value of automotive materials. Need for more emphasis on triple bottomline thinking up front – i.e., identifying the lost opportunity cost and recovery value of energy/environmental/effort at EOL of automotive products. What is the value proposition of EOL products/components (which typically end up in junk yards or are shredded)? Need for systems-level thinking at all levels – government, industry, society – concerning recovery and reuse of materials and product forms. Need for long-term solutions (i.e., design for disassembly for future vehicle platforms), versus short-term solutions (i.e., current vehicle platforms). Industry lacks sufficient information (e.g., metrics) and tools, engineering practices (e.g., design for disassembly) for evaluation of EOL practices. What is the impact of high-capacity versus lower capacity manufacturing in plants that are subject to cyclic downturns in the industry?
Value Proposition Statement	WHAT IS THE KEY BENEFIT OF THIS WORK TO STAKEHOLDERS?
Project Vision Objective	A **total systems approach** taken to the vehicle and major sub-system/components from design, manufacturing, operation and EOL, based on sustainability considerations – energy, toxic materials generated, etc. Benchmarking global automotive and other industries on EOL to define the attributes and metrics for sustainable manufacturing. European Union EOL guidelines are selectively used (if at all) in North America, and we need tools customized for N. America.

	In the quest for comfort, safety and emissions/fuel efficiency, we tend to lose sight of sustainability considerations with the vehicle industry. Talent shortage (fewer people doing more) makes it difficult to implement and accelerate change in workforce readiness for sustainability.
Project Deliverable(s)	Information derived from detailed LCAs (e.g., Energy impacts, toxic waste flows, etc) for major vehicle components (seats, powertrain, BIW, etc) with mitigation plans and secondary use (second life) applications of reused vehicle materials. Direction & guidelines for design engineers using sustainability considerations as integral to engineering analysis. E.g., tools to assess the impact of using recycled feedstock. A strong position document on the worldwide state of EOL practices, with a Call to Action.
Project Workflow Steps and duration of each step	Examine body design (frame, chassis, powertrain) and materials (e.g., TWBs, multi-materials) included by several different vehicle manufacturers to understand state of technology and what considerations drive their selection. Examine vehicle teardown information and tune/adapt it for reviewing sustainability considerations (e.g, A2Mac1, Munro & Associates). Identify key critical components for study, based on highest mass rankings (hence, impacts) – engine, frame, BIW. Ref: EOL directives and documents published by EU organizations as starting points.
“Best Guess” Cost	
Industry Champion(s)	USCAR-Vehicle Recycling Partnership (requires strong value proposition), Dr. David Cole, Retirees from OEMs (Experience Exchange via a State of MI program),

Project Approach/ Guidelines	
Participant Names and contact info	Robert DeKleine (Ford), Tom Goldsby, OEM Communication managers: Tony Cervone (GM), Ray Days (Ford), ------(FCA),
Capable Technology Providers	A2Mac1, Munro & Associates, OEM Vehicle Planning/Engineering Dept/ & Communication Staffs, Vehicle Recyclers, Auto Industry Action Group (AIAG)